

The Dynamic Syntax of Left and Right Dislocation

—A study with special reference to Chinese

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Abstract

Within the theoretical framework of Kempson et al (2001), this thesis provides an in-depth exploration of the dislocation phenomenon, one of the principal characteristics of natural language syntax: a word or phrase appears in a position apparently inconsistent with the relations it holds with other elements in the structure. The thesis, essentially a case study for the theoretical approach, is empirically based on Chinese, a non-inflectional language where to a large extent word order constrains its interpretation and defines its grammatical functions. Focusing on both the left and the right boundary of the Chinese clause, this study explores the complex, subtle interaction between syntax, semantics and pragmatics.

Under the dynamic approach which takes the incremental left-to-right processing of linguistic forms to be a fundamental part of characterising the relation between syntactic structure and semantic interpretation, and also makes pragmatic inference a part of linguistic formalism, a parsimonious, straightforward explanation is provided through detailed analysis for a range of key grammatical constructions displaying periphery effects, previous analyses of which are sought in pure syntactic, semantic or pragmatic terms. This study demonstrates that with the dynamics of natural language encoded in linguistic formalisms, the grammatical machinery required to account for linguistic phenomena is massively simplified.

The parsimonious, straightforward nature of my analysis is reflected in the economical use of technical entities throughout the study. The dynamic approach developed in the thesis does not involve a multiplicity of abstract, static notions but only two dynamic notions, underspecification (both syntactic and semantic) and pragmatic enrichment. In the first part of the study, I focus on the preverbal boundary and explore grammatical structures such as topic, passive and emphatic constructions. Using the two concepts of underspecification, that of final contribution to the propositional structure of the clause and of semantic content, and of the concept of LINK structure, I show that these constructions share the same underlying properties. Differences, particularly with respect to pragmatic interpretation, are shown to result from the grammatical expressions with which dislocated noun phrases are associated (if any).

In the second part of the study, I use the same general approach to the postverbal boundary and explore grammatical constructions such as focus and background topic constructions which both are shown to display right-periphery effects structurally, although semantically the right-dislocated expressions clearly have different properties. Differences between the interpretation of postverbal dislocated expressions and those on the left periphery are shown to result directly from the context induced by the parsing of the verb. I argue on the basis of detailed analysis that a full account of these linguistic structures cannot be sought in only syntactic, semantic or pragmatic terms but should be grounded in a dynamic perspective that combines all three.

Although I develop a parsing-based dynamic account of dislocation phenomenon in Chinese, implicit in it are some findings about the general properties of this language. Looked at from a descriptive viewpoint, the major findings of this study are as follows: (i) dislocation is commonly used in such a non-inflectional language, and is apparently motivated for fulfilling various grammatical (and discourse) functions; (ii) the extent to which syntax, semantics and pragmatics interact in the interpretation of dislocation structures is considerable; (iii) Chinese is indeed a topic-prominent language where topic is not only manifest in pure topic structure as has been widely assumed, but noticeable in other grammatical structures.

This study not merely provides a novel analysis of a particular language from an interpretive viewpoint but also justifies the DS stance about linguistic knowledge. With special reference to a fascinating language like Chinese, the study shows that a full understanding of the nature of language and the knowledge of language cannot be achieved without a better understanding of the use of that language, which has been neglected in mainstream theories of language. The subtle interaction between various kinds of linguistic knowledge in the interpretive process of dislocation structures is a perfect reflection of what natural languages enable human beings to do. Viewed in this perspective, the thesis breaks new ground in analysing natural language through the use of concepts of underspecification and pragmatic enrichment.

Declaration

I declare that this thesis was composed by myself, that the work contained herein is my own except that where explicitly stated, otherwise in the text, and this work has been submitted for my other degree or professional qualification except as specified.

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ABBREVIATIONS USED IN GLOSSES

The Chinese examples employed in this thesis are transcribed in the *Pinyin* system of romanisation with tones suppressed. The abbreviations used in the English glosses are listed as follows, most of which are described in the current literature.

Abbreviation	Term
ABS	absolutive
ACC	accusative
BA	the fronted object marker in the <i>ba</i> construction
BEI	the passive voice marker in the <i>bei</i> construction
CL	classifier
COMP	complementiser
DEC	declarative
DUR	durative aspect marker (<i>zhe, zai</i>)
ERG	ergative
EXP	experiential aspect marker (<i>guo</i>)
LOC	localiser (<i>zai</i>)
NOM	nominaliser (<i>de</i>)
PAR	particle used to indicate a pause
PFV	perfective aspect marker (<i>le</i>)
PST	past tense marker
Q	question marker
REL	relativiser
SFP	sentence-final particle
1SG	first-person singular pronoun
1PL	first-person plural pronoun
2SG	second-person singular pronoun
2PL	second-person plural pronoun
3SG	third-person singular pronoun
3PL	third-person plural pronoun

Chapter 1

Chinese Syntax: A General Description

1.1 Introduction

The Chinese language,¹ genetically classified as an independent branch of the Sino-Tibetan language family, displays some typological properties compared with other languages in the world. One of the salient characteristics of this language is the striking simplicity in its word formation. The simplicity of the words of Chinese can be evidenced by the fact that such a language does not manifest the morphological complexity found in inflectional languages. Specifically, Chinese has no prefixes nor suffixes nor number markers nor case markers nor agreement markers nor tense markers², which is why it has been referred to as an isolating language where each word consists of just one morpheme and cannot be further analysed in component parts (cf. C. Li and Thompson 1981).

The lack of inflectional morphology renders Chinese largely, if not entirely, dependent on word order to constrain interpretation and define its grammatical system. Unlike inflectional languages where inflectional morphemes clearly signal certain grammatical functions of nouns such as subject, object and so on, Chinese expresses such grammatical relations by means of the ordering of nouns relative to the verb. In general, the noun preceding the verb is taken as the subject of the sentence while the one following the verb is taken as the object of the sentence (see Chao 1968), which appears to follow the subject-before-object word order universal in natural languages (see Greenberg 1966). Given this primary characteristic, Chinese can be roughly described as an SVO language. But this is not the absolute

¹ The term 'Chinese' used throughout the thesis refers to the standard language spoken in the People's Republic of China and Singapore where it is used as one of the official languages. It is also known as Mandarin or Mandarin Chinese.

² There is one exception in terms of number markers. In Chinese, pronouns or nouns referring to people can be marked with *-men* which is corresponding to plural in English, e.g. *wo* 'I/me' → *women* 'we/us', *ni* 'you' → *nimen* 'you', *ta* 'he/she/it' → *tamen* 'they/them'.

truth, of course. In actual speech, Chinese does not observe a rigid SVO word order, but instead displays a considerable degree of flexibility.

1.2 Word order flexibility

Due to the lack of inflectional morphology in Chinese, there lies a possibility that such a language tends to take advantage of this central property and enjoy a considerable freedom in its grammatical system. Indeed, it has been observed that Chinese manifests a high degree of flexibility in its surface word order. Consider the following examples:

- (1.1) *women mai le fangzi.*

1PL sell PFV house

‘We sold the house.’

- (1.2) *women fangzi mai le.*

1PL house sell PFV

‘We sold the house.’

- (1.3) *women ba fangzi mai le.*

1PL BA house sell PFV

‘We sold the house.’

- (1.4) *fangzi women mai le.*³

house 1PL sell PFV

‘The house we sold.’

If we take (1.1) as a canonical sentence, namely one with an SVO order, then (1.2) obviously has an SOV order. The same is true of (1.3), if we follow the common practice of treating the particle *ba* as the object marker. As for (1.4), it is undoubtedly an OSV order, though the fronted object NP has certain topical properties from a discursal perspective. All the sentences are perfectly grammatical and frequently used in everyday conversation, though one pattern may be more preferable than another to a particular speaker or more applicable than another to a particular context.

³ In sentences like (1.4), there is not necessarily an intonational break between the two preverbal noun phrases *fangzi* ‘house’ and *women* ‘we’. Optionally the initial noun phrase could take a pause particle *a*, *ma*, *ya*, etc., but this would result in a topic construction which as will be discussed in Chapter 3, is essentially different from the construction in (1.4).

The word order variation has engendered a lot of controversy over the issue involving the basic structure of Chinese. It certainly begs at least one question, what is the basic order of such a language? Two theses concerning word order have emerged as a result of debate among researchers. Some linguists like C. Li & Thompson (1975, 1981) assert that Chinese is undergoing a change from SVO towards SOV and is becoming a topic-prominent language, whereas others like Sun & Givón (1985) claim that Chinese is a typical and rigid SVO language like English and the OV construction is only an emphatic or a contrastive discourse device.

It seems problematic to provide a definite answer to the question concerning the basic structure in Chinese, given the hard fact that both SVO and SOV constructions co-exist in such a fascinating language. Just as we have no complete proof that SOV is in the process of becoming a preferable pattern, we equally have no complete proof, as Sun & Givón (1985) themselves admit, that SOV order is in every detail an emphatic or a contrastive discourse device. Of the above four examples, the construction in (1.4) is structurally akin to the left-dislocation structure in English, and functionally can be employed as a contrastive device. Compare (1.5), a Chinese example adapted from (1.4), and (1.6), an English example with the leftmost element being emphasised and contrasted with the initial NP in the subsequent utterance.

(1.5) *fangzi women mai le; qiche (women) mei mai.*

house 1PL sell PFV car 1PL not sell

‘The house we sold; the car we didn’t.’

(1.6) *Potatoes we like; tomatoes we don’t.*

But for sentences (1.1)-(1.3), they are all perfectly natural if employed as an answer to a question like (1.7), which implies that an SOV structure as in (1.2)-(1.3) does not invariably function as a contrastive discourse device.

(1.7) A: *nimen zenme yixiazi you zheme duo qian?*

2PL how suddenly have so much money

‘How could you suddenly have so much money?’

B1: *women mai le fangzi.*

1PL sell PFV house

‘We sold the house.’

B2: *women fangzi mai le.*

1PL house sell PFV

‘We sold the house.’

B3: *women ba fangzi mai le.*

1PL BA house sell PFV

‘We sold the house.’

Although it is true that sometimes word order variation is likely to be motivated by semantic or pragmatic considerations, yet what is significant is the fact that the constructions demonstrated in the above out-of-context examples are all grammatical devices employed in the Chinese language. If we have to make a generalisation about its structural properties, we may tentatively draw a conclusion that Chinese does not have a rigid SVO word order like English, but it does have a rigid SV construction at its very heart, with the remaining elements freely ordered with respect to this according to communicative contexts.

1.3 Semantics in syntax

The fact that in Chinese grammatical relations among constituents are coded by means of surface word order to a large extent opens up the possibility that there could be more interaction between syntax and semantics in this language than inflectional languages where grammatical functions of syntactic units are in general indicated by means of inflectional morphology. It has been observed by a number of linguists (e.g Mullie, 1932, Chao 1968, C. Li & Thompson 1975) that word order in Chinese often carries a lot of semantic functions, which shows a high correlation between syntax and semantics.

One piece of evidence is that the interpretation of a noun phrase has a different result with reference to its syntactic position. Specifically, pre-verbal and postverbal position often signals a semantic distinction for nominal expressions. Chao (1968, p.76), who treats a preverbal NP as subject and a postverbal one as object, has provided an explanation of the semantic contrast in terms of information: ‘the subject is likely to represent the known while the predicate introduces something

unknown...Thus there is a very strong tendency for the subject to have a definite reference and the object to have an indefinite reference.’ Consider the following examples where bare NPs appear in both subject and object positions:⁴

- (1.8) *laoshi chuban guo shu.*
teacher publish EXP book
‘The teacher has published a book.’
- (1.9) *laoban zai xie baogao.*
boss DUR write report
‘The boss is writing a report.’
- (1.10) *shu chuban le.*
book publish PFV
‘The book has been published.’
- (1.11) *baogao xiewan le.*
report finish PFV
‘The report is finished.’

As shown by the English translations of (1.8)-(1.9), native speakers tend to assign a definite reading to the preverbal NPs *laoshi* ‘teacher’ and *laoban* ‘boss’, and an indefinite reading to the postverbal NPs *shu* ‘book’ and *baogao* ‘report’. However, when the same bare NPs appear before the main verb as exhibited in (1.10)-(1.11), they would receive a definite interpretation as indicated by the translations. One may argue that linguistic behaviour of this sort is not particular to one language since it is a widespread tendency among languages to place old information, hence definite NPs, before new information, hence indefinite NPs. But the significance of the linguistic phenomenon in Chinese lies in the systematic aspect of the correlation between syntax and semantics.

Another piece of evidence for the effect of semantics on syntax in the Chinese grammatical system is the interpretation of adverbial expressions with regard to the verb. Just like the nominal expressions, semantic differences often arise between pre-

⁴ Of course native speakers are allowed to make the preverbal bare NPs morphologically definite by marking them with demonstratives such as *zhe-wei laoshi* ‘this teacher’ and *na-ge laoban* ‘that boss’, and the postverbal bare NPs morphologically indefinite by marking them with numerals such as *yi-ben shu* ‘a book’ and *yi-fen baogao* ‘a report’.

and postverbal position for adverbial expressions such as temporal expressions and locative expressions (cf. C. Li & Thompson 1981). Take temporal expressions as an example. A general tendency in terms of semantics is that punctual time phrases are prone to appear preverbally, whereas durative time phrases are prone to occur postverbally. The following examples are illustrative of such a semantic tendency:

(1.12) a. *wo shi dianzhong qichuang.*

1SG ten o'clock get up

'I get up at ten o'clock.'

b. **wo qichuang shi dianzhong.*

1SG get up ten o'clock

(1.13) a. *wo shui le shi-ge zhongtou.*

1SG sleep PFV ten-CL hour

'I slept for ten hours.'

b. **wo shi-ge zhongtou shui le.*

1SG ten-CL hour sleep PFV

Given the systematic interaction between semantics and syntax in Chinese, native speakers have to resort to semantics to resolve syntactic problems. Since Chinese displays a considerable degree of word order flexibility as already discussed above, sometimes more than one noun phrase can precede the verb, which naturally raises a question as to how to determine their grammatical functions. Consider the following sentence where there is usually a short pause after the initial noun phrase:

(1.14) *Zhangsan Zhongwen wo jiao guo.*

Zhangsan Chinese 1SG teach EXP

'As for Zhangsan, Chinese I taught (him).'

Since subject is not a structurally well-defined notion in Chinese (see Chao 1968, C. Li & Thompson 1981), one has to examine the semantic relationship of noun phrases with the verb. With the help of the phonological cue, one is able to identify the leftmost NP *Zhangsan* as the topic of the sentence, namely it is what the rest of the sentence is about. With the help of semantics, one is then able to identify *wo* 'I' as the subject of the sentence and *Zhongwen* 'Chinese' as the (fronted) object of the

sentence,⁵ because the former as the agent performs the teaching action while the latter as the patient receives the teaching action. Clearly, the notion of subject employed here is based on the semantic ground, viz. the subject of a sentence in Chinese, as defined by C. Li & Thompson (1981), is the noun phrase that has a 'doing' or 'being' relationship with the verb in that sentence.

1.4 Pragmatics in syntax

It is advisable to assume that pragmatics may play an important role behind the flexibility of word order and the interplay between semantics and syntax. The definiteness versus indefiniteness interpretation of bare noun phrases in pre- and postverbal position, for instance, is also a manifestation of pragmatic factors in constituent ordering, since it is a general tendency in language use to put known information at the beginning of the sentence and new information at the end of the sentence. As a matter of fact, pragmatic considerations have a strong effect on linguistic performance in Chinese as well as its surface word order.

As is well-known, Chinese has the freedom of omitting any argument when it is clear that they can be recovered from the context. Apart from the pro-drop property, Chinese could go as far as to omit any constituent if the message to be conveyed, however parsimonious, is comprehensible to the hearer. There is a joke that could best show how Chinese speakers observe Zipfian's Economy, Gricean Maxim of Quantity or Sperber & Wilson's Principle of Relevance by using language as a pragmatic tool. It goes like this: two people see each other in the dark and they then start a conversation as follows:⁶

(1.15) A: *shui?* ('who')

B: *wo.* ('me')

⁵ As will be discussed later in Chapter 3, constituents such as *Zhongwen* 'Chinese' are the focus of the sentence, precisely topicalised focus in contrast to the topic of the sentence which is either morphologically or phonologically marked.

⁶ In English, the conversation would usually carry on as follows:

A: Who is over there?

B: It's me.

A: What are you doing?

B: I'm having a pee.

A: *zhua?* ('what', a northern dialect)

B: *niao.* ('pee')

The joke is simply a case showing that Chinese attempts to speak as little as possible, for which we have a set of good pragmatic theories. In some cases, Chinese tend to speak a bit more, for which we seem to lack a good theory though it is in essence a matter of pragmatics. Consider the following sentences:

(1.16) *Lisi pao le (Beijing) ji-tang.*

Lisi run PFV Beijing several-times

'Lisi made several trips (to Beijing).'

(1.17) *Wangwu deng le (ni) ban-tian.*

Wangwu wait PFV you half-day

'Wangwu waited (for you) for a long time.'

(1.18) *Zhangsan chi le yi-bu.*

Zhangsan late PFV one-step

'You were late by one step.'

Expressions like the boldfaced ones in (1.16)-(1.18) are adjuncts in the eyes of modern linguists, precisely frequency phrases as in (1.16), duration phrases as in (1.17) and extent phrases as in (1.18). They may not necessarily mean what they literally mean. But for native speakers, these adjunct expressions seem sort of obligatory because otherwise, hearers would feel that the relevant utterances are a bit infelicitous. These expressions, which both transitive and intransitive verbs are allowed to take, naturally blur the distinction between arguments which are taken to be obligatory and adjuncts which are thought to be optional.

The relative effect of pragmatics is not merely confined to linguistic performance in general, but also on certain grammatical constructions. Take *bei* construction, the typical passive construction as an example. Unlike English passives which are of derived voice nature, Chinese passives generally, if not exclusively, display a pragmatic nature. To illustrate this point, consider the following active-passive pair and their English translations.

(1.19) *laoshi kanjian le Lisi.*

teacher see PFV Lisi

'The teacher saw Lisi.'

(1.20) *Lisi bei laoshi kanjian le.*

Lisi BEI teacher see PFV

'Lisi was seen by the teacher.'

The active sentence (1.19) simply describes a seeing event in which the semantics of 'see', a verb of perception, is neutral, and the Chinese sentence is corresponding in every way to its English counterpart. However, the passive sentence (1.20) is in no way equivalent to its English counterpart, because for native speakers, the *bei* construction often carries an unfortunate or pejorative message. In the case of (1.20), it implies the adverse situation *Lisi* would face subsequent to the seeing event, i.e. he might be severely scolded for his mischief and or even punished consequently. Clearly, the adverse implication of *bei* construction is reached via a relevance-based interpretation, given that teachers are usually considered stern in the Chinese cultural context. This example illustrates that translation of voice in Chinese from active to passive is pragmatically grounded to a large extent, given that *bei* construction generally shows some salient pragmatic commitments.

The prominent role played by pragmatics in Chinese syntax has prompted some researchers to label Chinese as a 'pragmatic' language as opposed to English-type 'syntactic' languages (e.g. J.Huang 1984, Y.Huang 1994). Although this is perhaps a big claim to be verified, pragmatics does do a lot of work in the production and interpretation of the Chinese language.

1.5 Overview of the thesis

In the foregoing introductory discussion, I have presented a general picture of Chinese syntax and also a sketch of how syntax interacts with semantics and pragmatics in the production and interpretation of the Chinese language. In this study, I shall provide an in-depth exploration of the dislocation phenomenon which occurs at both the left and right boundaries of the Chinese clause and which is also one of the principal characteristics of syntax of all human languages: a word or phrase appears in a position apparently inconsistent with the relations it holds with other

elements in the structure. I shall develop a dynamic analysis of dislocation structures in Chinese within the theoretical framework of Dynamic Syntax (Kempson et al 2001, Cann et al, in press), a linguistic formalism that as will be introduced in the next chapter, takes the incremental left-to-right processing of linguistic forms to be a fundamental part of characterising the relation between syntactic structure and semantic interpretation and also makes pragmatic inference a central part of linguistic formalism.

With the theory of Dynamic Syntax, I shall investigate a range of key grammatical constructions displaying periphery effects, in the hope that their structural properties will be characterised from a dynamic perspective. The study is divided into two parts, according as where periphery effects are displayed, that is, at the left or the right boundary of the clause. In the first part of the study, I focus on the preverbal boundary and explore topic, passive and emphatic constructions as in Chapters 3, 4 and 5 respectively, which all are shown to display left-periphery effects structurally. In the second part of the study, I focus on the postverbal boundary and explore focus and background topic constructions as in Chapters 6 and 7 respectively, which both are shown to display right-periphery effects structurally. Finally, the major findings of this study are summarised in Chapter 8, where the theoretical implications of these findings for linguistic research are also discussed.

Chapter 2

The Dynamics of Language Processing

2.1 A preliminary introduction

Before demonstrating the architecture of Dynamic Syntax (Kempson et al 2001) I shall, in the first place, introduce its stance about a theory of linguistic knowledge. From a common sense of view, it should be a simple matter to provide an answer to a question as to what it means to know a language such as Chinese and English. At the very least, knowing a language means having the capacity to communicate in that language, such as being able to interpret what is being said and being able to say meaningful utterances. Such a common-sense view, which shows a close correspondence between language capacity and language use, naturally allows linguists to adopt a linguistic methodology of taking the latter as a point of departure from which the former can be explained, a departure different from the standard practice that has dug a gulf between linguistic competence and language use.

Dynamic Syntax (henceforth as DS) as a reflex of the common-sense view of language, takes the stance that linguistic knowledge involves the capacity to process natural language input. On such a preliminary assumption, DS attempts to provide a formal account of natural language by characterising its parsing process in which various kinds of linguistic knowledge such as syntactic, semantic and pragmatic properties, contribute to the ultimate goal of interpretation. As a formal model of natural language understanding it defines the parsing process as a progressive building up of representations of content. The novelty of such a model lies in the fact that it takes the formal articulation of the parsing process as a basis for syntactic explanations of natural languages. Hence this paradigm can be considered a parsing-directed grammar formalism. Before showing how syntactic explanations become possible through the dynamics of semantic interpretations, we set out two challenges facing all grammar formalisms, for the purpose of providing some preliminary justification for the methodology of DS.

2.1.1 Compositionality and context-dependency

All human languages display two central properties, which constitute two major problems challenging all language theories. One is compositionality in the sense that individual words can be combined into sentences at arbitrary depths of complexity. The other is context-dependency in the sense that almost every linguistic expression can be taken to express different interpretations in different contexts. For theoretical linguists, the problem of characterising the compositional property of language, then, is to articulate the interaction between order of words and their interpretation within a sentence, whereas the problem of characterising the context-dependent property of language is to explain the association between interpretation of words and those neighbouring them.

The common practice in addressing the two problems is that the first one is usually considered to be a syntactic one, and the challenge is hence taken up by syntacticians, while the second one is uniformly considered to be a semantic one, and the challenge is then taken up by semanticists or pragmaticists. Yet as will be discussed below, both the problem of compositionality and the problem of context-dependency truthfully reflect the intrinsic properties of language, viz. the way language is used in context. In addition, there is systematic interaction between the two sorts of phenomena, with linguistic expressions whose semantic interpretation is determined in context feeding into structural processes in different ways (cf. Cann et al, in press).

The compositional property of language reflects the capacity of human beings to systematically construct structurally complex sentences and assign some semantically interpretable content to each of them. Accordingly, linguistic knowledge does not mean merely having the capacity to string individual words together to establish an arbitrary structure. Instead, it means having the capacity to string them together in such a way that they can be taken to have an interpretation that has itself been assigned in a systematic fashion. Seen from this perspective, there is a systematic correspondence between syntax and semantics, the underlying significance of which does not seem to have been sufficiently recognised, since the problem of syntax-semantics dependence has been generally given an exclusively

syntactic explanation, and the problem of context dependence purely semantic explanation.

The sharp separation between syntactic and semantic explanations of properties of language often results in a tension between the characterisation of how words are grouped together to form strings (syntax), which often involves static representations of syntactic structure, and characterisation of how such strings are assigned an interpretation (semantics), which is assumed to depend on how information is established in context. One of the consequences of such a sharp separation is that when it comes to the mapping from syntactic structure to semantic structure, linguists would come up against a lot of empirical evidence resisting the formal stance. Attempts to resolve the problems often result in postulating multiple levels of highly abstract structures as in mainstream theories of language, which inevitably makes complicated the grammatical machinery required to account for linguistic phenomena.

Therefore to resolve the theoretical problem, we have to consider a methodology able to address the problems of syntax-semantics dependence and context-dependence, and a framework able to characterise both the compositional and context-sensitive properties of natural language. On the assumption that intrinsic properties defining language is a direct reflection of the way it is used in context, DS takes the stance that both syntactic and semantic explanations can be articulated in terms of the dynamics of language. Accordingly it takes parsing as the basic task of defining a dynamic system, and places time-linearity and context-dependency at the heart of such a system on the ground that they determine the progressive building of information during the parsing process. With a definition of parsing as a goal-directed updating process, the syntactic properties of language can become explicable in terms of the development of structure relative to context against which choices can be made. The concept of context is, therefore, not merely sentence by sentence, but also word by word.

2.1.2 Interpretation and representation

To devise a parsing-directed framework attempting to characterise both the syntactic and semantic properties of language from a dynamic perspective, we are naturally

concerned with three principal questions: what interpretation for a natural language string is constructed relative to a particular context? How do components contribute to the overall interpretation? How can the characterisation of the parsing process constitute the basis for explaining the structural properties of language? With the appropriate answers to these questions, we may get a feel for the general spirit of DS as well as its formal basis, for the purpose of better understanding its technical apparatus which will be presented in the next section.

DS provides a formal model of natural language interpretation on the assumption that the parsing process is a process of constructing representations. Its theoretical framework is set within the representationalist methodology of Fodor (1981, 1983), who proposes that all cognitive processing involves the construction of mind-internal representations, and humans process incoming information from external stimuli and assign interpretation to a signal by means of this internal representational system. Following the spirit of Fodor, DS defines interpretation for a natural language string as a process of establishing some logical formula as representation of content attributed to that string relative to context. Furthermore, DS shares with the relevance-theoretic assumption (Sperber & Wilson 1995) that human reasoning is goal-directed to the maximally efficient processing of maximally relevant information¹, and hence further defines natural language processing as a goal-driven process, and the overall goal is to construct some full representation as interpretation.

To reflect the compositional properties of language, namely individual words can combine into larger constituents, DS models language processing as a task of the incremental building of structured representations of the interpretation assigned to a string uttered in context. In other words, the goal of constructing an eventual representation may start from a very partial structure representing an incomplete interpretation, which is increasingly enriched through the processing of more lexical items. This directly reflects the way human beings process information: they can manipulate partial information and systematically map it into another, using each piece of information provided as context for processing subsequently coming information.

¹ See Marten 2002 for a detailed discussion of the link between relevance theory and the theory of Dynamic Syntax.

As will be shown in section 2.3, the update process of building up representations is based on a left-to-right, word-by-word basis, reflecting not merely the time-linearity of information building in natural language processing, but also the step-by-step parsing procedure towards the goal of establishing an eventual representation. The process of parsing a sentence, for instance, is a process of progressively establishing semantically transparent structures, bit by bit, through the parse of each word — initially starting with very incomplete structures, and ultimately deriving a complete propositional structure representing the interpretation assigned to that sentence. Given that lexical items provide the input to the representations of content, DS, in line with other frameworks such as HPSG and LFG, assigns a central role to lexicon. Within DS, lexical information is employed to build more articulated representation by adding information and providing instructions. To reflect the context-dependent property of language, the parsing process in DS also involves taking information independently established in context, as in the processing of anaphora which generally requires pragmatic operations.²

Finally, a very brief word about the ultimate question as a more detailed discussion will be provided in section 2.3. Although the overall construction process ends up with some full representation, it involves a set of transitions from very partial representations to more complete ones, as more information from lexicon comes in. What distinguishes DS from other frameworks is that the structural properties of language are not characterised in some static configuration, but through the dynamics of transitions from one structure to another. It is in this sense that syntax has been made dynamic. Therefore syntactic explanations, which are encapsulated in the dynamic transitions, have to make reference to the process of building up representations.

2.1.3 Underspecification and resolution

As discussed in the preceding subsection, natural language interpretation in DS is an incremental process of constructing structured representations. The whole process of construction, which is geared towards some complete representation of content,

² Section 2.3.4 will show how the representations of anaphora are constructed through pragmatic operations.

characteristically involves successive updating of representations as parsing proceeds. This is because at different stages of the parsing process, there may exist various aspects of incomplete interpretation. More coming information, either from lexicon or from context, makes possible the transition from a partial structure to a richer structure, viz. the update from an incomplete specification of interpretation to a full specification of interpretation. The incompleteness of interpretation occurring at every intermediate step of the interpretation process, justifiably licenses DS to incorporate the concept of underspecification into its framework.

Underspecification is manifested in a number of different ways and its resolution could best reflect the dynamics of natural language interpretation. One typical form of underspecification is the so-called long-distance dependency that is generally taken to constitute a central challenge for any syntactic explanation. Consider how to interpret the following Chinese sentence:

- (2.1) *Lisi, wo jide ni shuo guo ai he jiu.*
Lisi 1SG remember 2SG say EXP love drink wine
'Lisi, I remember you once said he likes drinking.'

The noun phrase *Lisi* at the left periphery of the sentence, is a long distance away from the position where it is supposed to be interpreted. In other words, it appears to be in the wrong position, or displaced from an appropriate position, because there is no way to reflect the semantic compositionality. Put simply, this left-peripheral word cannot combine with its neighbouring word *wo* 'I' to build up a straightforward semantic interpretation.

Now consider what is involved in the parse of the left-dislocated expression. From a parsing perspective, sentences with a left-dislocation structure like (2.1) present a particular form of structural underspecification. At the point of processing the leftmost expression, one cannot decide what precise contribution it makes to the interpretation of the whole sentence. To construe it as the subject of the verb phrase *ai he jiu* 'love drinking', one has to relate the initial position with some position in the string, its interpretation site. Reflecting this observation, DS defines the initial expression as projecting an unfixed node, a fixed position of which is determined

later within the structured representation as more lexical items are processed. The resolution of the initial underspecification is apparently part of the dynamics of the parsing process. This example gives a sketch of how the characterisation of structural properties of natural language is made available through the characterisation of the interpretation process.

Apart from the underspecification of position, natural language expressions may display the underspecification of content, as in the case of anaphoric expressions. The interpretation of anaphoric expressions presumably involves the resolution of semantic underspecification, which actually involves updating from an incomplete representation to an articulated representation. The update process, as will be discussed in 2.3.4, is a process of pragmatic substitution. Consider how to interpret the pronouns in sentence (2.2):³

(2.2) *jinguan Mei Xiaojie taoyan Mao Xiansheng, ta haishi jiagei le ta.*
 although Mei Miss dislike Mao Mr 3SG still marry PFV 3SG
 ‘Although Miss Mei disliked Mr Mao, she still married him.’

Without recourse to the first clause, we only know from the second clause that some female individual married some male individual, given that in Chinese the subject of the verb *jia* ‘marry’ can only be some female person. In this sense, the denotational content of the two pronouns is underspecified, since their contentful values depend on the antecedents they have in context. To resolve the semantic underspecification of the anaphoric expressions, we have to refer to the contextual information to yield a specific interpretation. Reflecting the context-dependent properties of natural language, pronominal expressions in DS are treated as place-holders whose values would be enriched by the information established in context. Specifically, the initial incomplete specifications of interpretation should be replaced by context-particular representations of content. The replacement is implemented through general pragmatic operations, which applies as part of the parsing process.

³ In speech, Chinese third-person pronouns do not make a distinction between masculine and feminine.

The characterisation of underspecification and its resolution, as will be shown below by the formal tools of DS, is the central task of this particular model of natural language interpretation. It demonstrates how humans employ various kinds of information such as syntactic, semantic and pragmatic, in the interpretive process, and simultaneously justifies the stance of DS about linguistic knowledge, namely knowing a language means knowing how to process it.

2.2 The tools of Dynamic Syntax

This section introduces the technical concepts and the formal tools of DS, setting out the architecture for describing the process of constructing representations of content relative to context against which choices can be made as the parsing process proceeds.

2.2.1 Tree logic and treenode decorations

To model the process of building structured representations of interpretation on a left-to-right sequence of words, DS employs the concept of a tree structure to represent the semantic structure of interpretations assigned to words uttered in context, rather than the syntactic structures defined over words in a string. The interpretation process in DS is thus a process of tree growth, initially beginning with some very partial structure, then increasingly enriching that structure and ultimately ending with some completed structure.

The formal backbone of the dynamic process of tree growth is the logic of finite trees (LOFT) (Blackburn and Meyer-Viol 1994, also see Kempson et al 2001), a modal logic that describes binary tree structures, reflecting the mode of semantic combination in functional application. Nodes in a tree may be identified by their assigned addresses consisting of a numerical index ranging over 0 and 1. Following the conventional pattern, the argument daughter of a node is assigned the index $n0$ and placed on the left side, and the functor daughter the index $n1$ on the right side. This locational information may be expressed by the predicate Tn (tree node) which takes some index as value, as illustrated in figure 2.1.

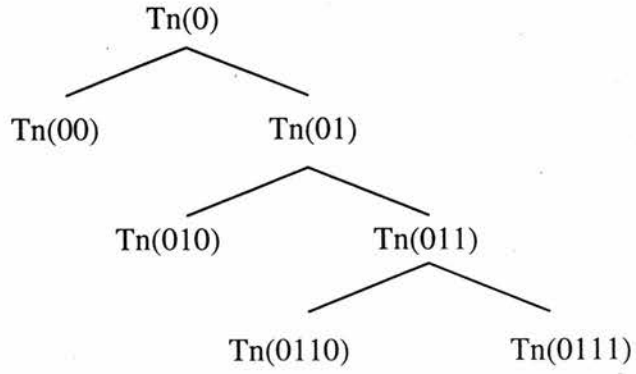


Figure 2.1: Tree locations

The language of description used in the framework of DS includes not only the vocabulary that describes individual nodes, but also modal operators that describe the relation between tree nodes. There are two basic modalities with one corresponding to the daughter relation, $\langle \downarrow \rangle$ ‘down’, and the other corresponding to the mother relation $\langle \uparrow \rangle$ ‘up’, which can be used with or without the numerical subscript. In addition, modality operators can be iterated, e.g. $\langle \downarrow \rangle \langle \downarrow \rangle$, $\langle \uparrow \rangle \langle \uparrow \rangle$, $\langle \downarrow \rangle \langle \uparrow \rangle$, $\langle \uparrow \rangle \langle \downarrow \rangle$, etc., providing a means of identifying from one node in a tree that certain property holds of some other node, a means to express additional requirements that need to be satisfied at some other node other than the current node. Hence the statements in (2.3) are all true of a tree from the node n (cf. Cann et al, in press).

(2.3) from node n

$\langle \downarrow_0 \rangle X$	X holds at the argument daughter of n
$\langle \downarrow_1 \rangle X$	X holds at the functor daughter of n
$\langle \downarrow \rangle X$	X holds at the daughter of n
$\langle \uparrow \rangle X$	X holds at the mother of n
$\langle \downarrow^* \rangle X$	X holds at a node dominated by n
$\langle \uparrow^* \rangle X$	X holds at a node that dominates n
$\langle \downarrow \rangle \langle \downarrow \rangle X$	X holds at n ’s daughter’s daughter
$\langle \uparrow \rangle \langle \uparrow \rangle X$	X holds at n ’s mother’s mother
$\langle L \rangle X$	X holds at a node that is linked to n
$\langle L^{-1} \rangle X$	X holds at a node that n is linked to

In addition to the description representing the locational information, nodes in a tree are decorated by DECLARATIVE UNITS (DU), mainly representing the semantic information holding at a given node. The DUs consist of a set of labels expressing a range of different sorts of information, among which two are most commonly used.

One label is *Fo*, the formula value representing the concepts expressed by words uttered in context. *Fo(Elizabeth)*, for instance, is the representation of the concept we construct from the English word *Elizabeth*. Depending on context, it may refer to the current queen in the UK or a particular individual bearing the name ‘Elizabeth’.

The other label is *Ty*, the type value that not only provides the information about the semantic type of an expression but also associates the expression with a particular sort of denotation. Thus type *t* is a propositional type denoting a truth value, and type *e* is a term denoting some entity. Complex types including functor ones provide information about the number and types of the arguments with which a particular expression can combine. DS only employs a small set of basic types *e*, *t*, *cn*,⁴ on which the complex types are represented as conditional statements. The most common types used in the DS system are listed in (2.4) (cf. Kempson et al 2001).

(2.4) Common types

$Ty(e)$	Individual term
$Ty(t)$	Proposition
$Ty(e \rightarrow t)$	(1-place) Predicate
$Ty(e \rightarrow (e \rightarrow t))$	(2-place) Predicate
$Ty(e \rightarrow (e \rightarrow (e \rightarrow t)))$	(3-place) Predicate
$Ty(t \rightarrow (e \rightarrow t))$	(Proposition-taking) Predicate
$Ty(t \rightarrow t)$	Sentential Modifier
$Ty((e \rightarrow t) \rightarrow (e \rightarrow t))$	Adverbial Modifier
$Ty(cn)$	Nominal
$Ty(cn \rightarrow e)$	Determiner

With the treenode descriptions, we now can provide a sketch of how the interpretation of a sentence like *David loves Mary* is established through the construction of structured representations. The tree in figure 2.2 where nodes are decorated with semantic information as well as locational information, shows how the tree growth results in a propositional formula as the eventual representation, by means of combining information from the functor nodes with information from the argument nodes.

⁴ In DS, the type *cn* is normally assigned to common nouns. Nevertheless, common nouns in Chinese, as will be discussed later, can sometimes be assigned a type *e*, given that bare nouns can appear as arguments, as shown in Chapter 1.

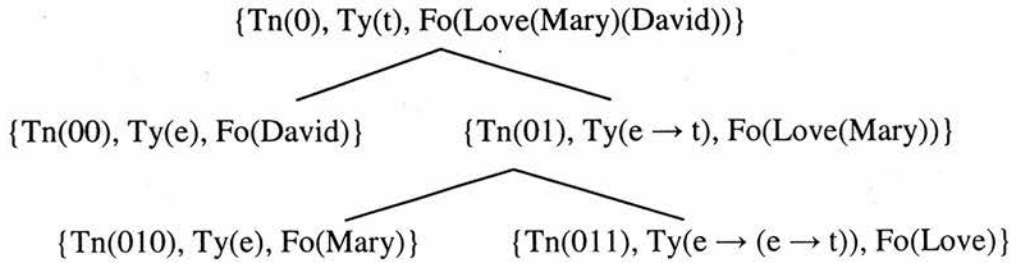


Figure 2.2: Representation of interpreting *David loves Mary*

2.2.2 Requirements and tree growth

As introduced in the previous subsection, the parsing process in DS is defined as a process of tree growth. Intrinsic to this parsing process, as discussed in section 2.1, are concepts of underspecification which is manifested in a variety of ways. Thus the driving force of tree growth is the need to specify underspecified information. From this perspective, the development of tree is also a process of satisfying a set of REQUIREMENTS for resolving various forms of underspecification.

A requirement is used to specify a goal to be undertaken and is shown by a question mark in front of the label to be instantiated. The use of requirements accompanies the development of tree: at a particular stage of the parsing process, nodes in a partial tree are always decorated with outstanding requirements as well as declarative units. The starting point of tree growth, for instance, is to build a tree the root node of which is formally introduced as $?Ty(t)$ by the rule called Axiom, a universal requirement to build a representation of a propositional content as interpretation. Such a requirement provides the minimal initial tree with only a root node underspecified of content but with a specified goal of constructing a formula of type t , reflecting the stance of DS that natural language processing is goal-directed.

Requirements can only be satisfied through the achievement of the specified goal, usually by establishing formulae of particular types with information from the lexicon. The overall goal $?Ty(t)$, for instance, is then achieved when the processing of the information provided by a string of words results in a complete propositional formula. The label $Ty(t)$ is only allowed to be annotated on the root node of a tree until after the universal requirement is fulfilled. Given the incremental nature of the parsing process, the overall goal often leads to subgoals allowing more and more

coming information to be processed. Therefore in the model of DS, nodes in partial trees are usually introduced with some declarative units and a set of requirements specifying the smaller goals to be achieved, as illustrated in figure 2.3.

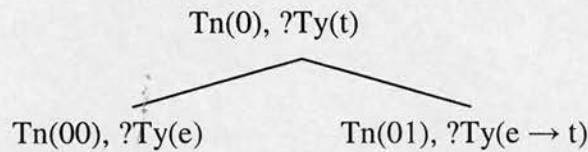


Figure 2.3: Initial expansion of the tree

The above tree shows that the achievement of the overall goal relies on the satisfaction of at least two subgoals, namely the requirements to develop the root node into two daughter nodes, which in turn relies on incorporation of the lexical information into the tree. To indicate a node is under construction, DS makes use of a pointer symbol \diamond , itself being part of language for the description of tree growth. The pointer shows the current task state under development during the parsing process.

In general, the requirement holding at a specific node must be fulfilled if it is highlighted by the presence of the pointer. Supposing that the processing of a string such as *Steve smokes* reaches a stage as shown in figure 2.4.

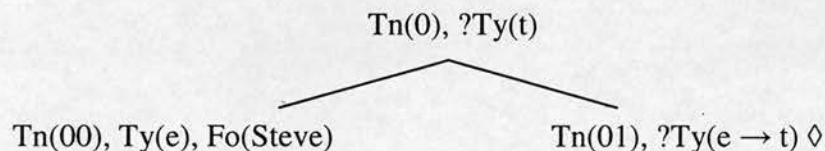


Figure 2.4: Parsing *Steve*

The pointer in the partial tree indicates that subsequent to the successful parse of the subject NP *Steve*, the node under construction is the functor node and the current task state is then $?Ty(e \rightarrow t)$, a requirement to build a one-place predicate. This allows the verb *smoke* to be processed and induce a sequence of lexical actions since it as input can meet the current requirement. Since the pointer provides important information about tree growth, its movement plays a significant role in the analyses to be presented in the subsequent chapters.

2.3 The dynamics of the parsing process

This section introduces how DS makes use of the formal tools presented above to characterise the dynamics of the parsing process and hence fleshes out the mechanism governing the system of DS. As already pointed out, the development of tree is a step-by-step procedure, constantly involving transition from one parse state to another. The transitions, as will be shown below, are implemented through three types of action, computational, lexical and pragmatic, which constitute the major components of the architecture of DS as a linguistic formalism.

2.3.1 Computational rules

Transitions from one parse state to another are licensed either by a number of computational rules, or by lexical instructions. The computational rules are general transition rules which constrain the way trees are developed, and are formally stated in terms of tree descriptions, with an input description and an output description, as shown in (2.5).

(2.5) Transition rules

$$\begin{array}{ll} \text{a. } \frac{\text{Input Tree Description}}{\text{Output Tree Description}} & \text{b. } \frac{\{\dots\phi\dots\Diamond\}}{\{\dots\psi\dots\Diamond\}} \end{array}$$

In what follows I shall only introduce those transition rules which are of direct relevance to the present study, but shall not discuss them in detail nor present a lot of examples, since applications of these rules will be demonstrated in a step-by-step way in the analyses throughout the subsequent chapters. Rules concerning the construction of trees will be introduced before those concerning the completion of trees.

2.3.1.1 Introduction and Prediction

A rule called INTRODUCTION licenses additional requirements to some node to the effect that one initial goal can be divided into two subgoals to require the tree to grow, viz. we can use the rule to add further requirements for two daughter nodes of certain types to a node that already has a type requirement. The formal definition is given in (2.6) in terms of tree descriptions and shown in (2.7) in terms of tree growth.

(2.6) INTRODUCTION

$$\frac{\{...\text{?Ty}(Y)...\Diamond\}}{\{\dots\text{?Ty}(Y), \text{?}\langle\downarrow_0\rangle\text{Ty}(X), \text{?}\langle\downarrow_1\rangle\text{Ty}(X \rightarrow Y), \dots\Diamond\}}$$

(2.7) tree growth:

$$\text{?Ty}(Y), \Diamond \Rightarrow \text{?Ty}(Y), \text{?}\langle\downarrow_0\rangle\text{Ty}(X), \text{?}\langle\downarrow_1\rangle\text{Ty}(X \rightarrow Y), \Diamond$$

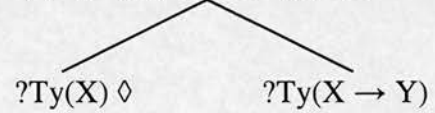
Note that the rule of INTRODUCTION merely adds to a node with a requirement to find an expression of type Y requirements to have two daughter nodes, one decorated with an expression of type X and the other an expression of type $X \rightarrow Y$. So the tree in (2.7) has not grown into a tree with three nodes but is still a tree with only one node. It is a second rule of PREDICTION that licenses the construction of the two required nodes decorated with requirements to be annotated with expressions of required types. The formal definition is stated in (2.8) in terms of tree descriptions and shown in (2.9) in terms of tree growth.

(2.8) PREDICTION

$$\frac{\{\text{Tn}(n), \dots, \text{?}\langle\downarrow_0\rangle\phi, \text{?}\langle\downarrow_1\rangle\psi, \Diamond\}}{\{\{\text{Tn}(n), \dots, \text{?}\langle\downarrow_0\rangle\phi, \text{?}\langle\downarrow_1\rangle\psi\}, \{\langle\uparrow_0\rangle\text{Tn}(n), \text{?}\phi, \Diamond\}, \{\langle\uparrow_1\rangle\text{Tn}(n), \text{?}\psi\}\}}$$

(2.9) Tree growth:

$$\text{?Ty}(Y), \text{?}\langle\downarrow_0\rangle\text{Ty}(X), \text{?}\langle\downarrow_1\rangle\text{Ty}(X \rightarrow Y) \Diamond \Rightarrow \text{?Ty}(Y), \text{?}\langle\downarrow_0\rangle\text{Ty}(X), \text{?}\langle\downarrow_1\rangle\text{Ty}(X \rightarrow Y)$$



The correlation between the two computational rules is clear: INTRODUCTION licenses the introduction of modal requirements while PREDICTION translates them into non-modal requirements by building the appropriate nodes with required types. The effect of these two transition rules can be illustrated by instantiating the type variables as t for Y and e for X , which is actually the introduction and prediction of subject and predicate as shown in (2.10a) and (2.10b) respectively.

(2.10) a. INTRODUCTION – subject and predicate

$$\frac{\{Tn(0), ?Ty(t) \diamond\}}{\{Tn(0), ?Ty(t), ?\langle \downarrow_0 \rangle Ty(e), ?\langle \downarrow_1 \rangle Ty(e \rightarrow t) \diamond\}}$$

b. PREDICTION – subject and predicate

$$\frac{\{Tn(0), ?\langle \downarrow_0 \rangle Ty(e), ?\langle \downarrow_1 \rangle Ty(e \rightarrow t) \diamond\}}{\{\{Tn(0), ?\langle \downarrow_0 \rangle Ty(e), ?\langle \downarrow_1 \rangle Ty(e \rightarrow t)\}, \{\langle \uparrow_0 \rangle Tn(0), ?Ty(e), \diamond\}, \{\langle \uparrow_1 \rangle Tn(0), ?Ty(e \rightarrow t)\}\}}$$

Alternatively, the introduction and prediction of subject and predicate through the application of the transition rules can be illustrated by a step-by-step procedure of tree growth, as in figure 2.5, where the transition from a single-node tree with a propositional requirement to a new single-node tree with two daughter requirements, and finally to a newer tree with two new nodes annotated with requirements of type e and type $e \rightarrow t$, is effected first by application of the rule of INTRODUCTION, and then by application of the rule of PREDICTION.

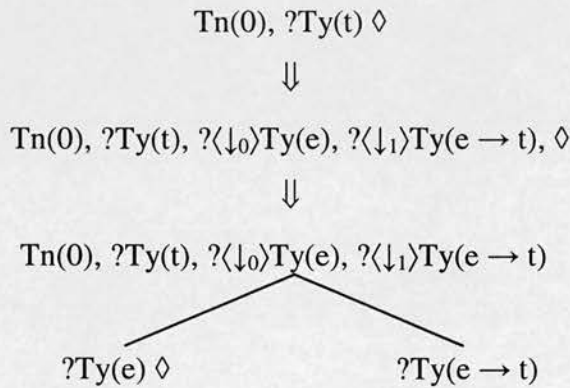


Figure 2.5: Introduction and Prediction of subject and predicate

2.3.1.2 *Adjunction and LINK Adjunction

The transition rules introduced so far are concerned with introduction of nodes into the tree and assignment of a fixed treenode position to them, such as subject node and predicate node. This subsection discusses transition rules concerning introduction of unfixed nodes into a partial tree. A rule called *ADJUNCTION defines a transition from a partial tree containing only one node with a propositional requirement of $Ty(t)$ to another partial tree that has an additional node with a requirement of $Ty(e)$ expression dominated by the input node and a requirement to

find a fixed position within the unfolding tree, which is defined in (2.11) in terms of tree descriptions and shown in (2.12) in terms of tree growth.

(2.11) *ADJUNCTION

$$\frac{\{Tn(a), \dots ?Ty(t) \diamond\}}{\{\{Tn(a), \dots ?Ty(t)\}, \{\langle \uparrow^* \rangle Tn(a), ?Ty(e), ?\exists x.Tn(x), \diamond\}\}}$$

(2.12) Tree growth:

$$Tn(a), ?Ty(t) \diamond \Rightarrow \begin{array}{c} Tn(a), ?Ty(t) \\ \vdots \\ \langle \uparrow^* \rangle Tn(a), ?Ty(e), ?\exists x.Tn(x) \diamond \end{array}$$

As will be seen in the next three chapters, *ADJUNCTION finds its best application in left dislocation structures, since it characterises the intuition that the left-peripheral expression, as discussed in 2.1.3, requires a fixed position for the overall structure to be interpreted. With the rule of *ADJUNCTION, the parse of *Mary* in a string *Mary, David loves* can be shown in figure 2.6.

$$\begin{array}{ccccc} Tn(0), ?Ty(t) \diamond & \Rightarrow & Tn(0), ?Ty(t) & \Rightarrow & Tn(0), ?Ty(t) \\ & & \vdots & & \vdots \\ & & \langle \uparrow^* \rangle Tn(0), ?Ty(e), ?\exists x.Tn(x) \diamond & & \langle \uparrow^* \rangle Tn(0), Ty(e), Fo(Mary), ?\exists x.Tn(x) \diamond \end{array}$$

Figure 2.6: Parsing *Mary* with *Adjunction

Notice how this computational rule reflects our intuition about structural underspecification: (i) the dislocated expression in a string may be parsed, which is why the pointer is situated at the new node lower than the top node, requiring it to be developed next; (ii) the dislocated expression is part of the string, which is why the new node has a modal requirement $\langle \uparrow^* \rangle Tn(a)$, indicating that it is dominated by the top node $Tn(a)$; (iii) the dislocated expression awaits to be slotted somewhere in the string, which is why the pointed new node has a positional requirement $? \exists x.Tn(x)$. In DS derivations, structural underspecification of this sort is always shown by the dashed line in the tree.

The output tree in (2.12) provides an environment in which the dislocated expression can be parsed and so an unfixed node can be constructed. As the parse of the rest of the string proceeds, the partial tree then grows to have subject and predicate daughter nodes through the application of INTRODUCTION and PREDICTION. The search for a fixed position for the unfixed node will continue on until it reaches a point where the information on the unfixed node is compatible with that on a fixed position. A rule of MERGE licenses the unification of all information on two nodes, and hence the resolution of structural underspecification, as defined in (2.13) where two node descriptions, referred to as ND and ND', are combined into one.

(2.13) MERGE

$$\frac{\{...ND, ND'...\}}{\{...ND \cup ND'...\}}$$

$$\Diamond \in ND'$$

MERGE normally takes place at a stage when the outstanding requirement on the unfixed node to find a treenode address and the outstanding requirement on a fixed node to find a formula of a certain type are both satisfied. Assume that the parse of the string *Mary, David loves* reaches a state where there is no coming information when the task of processing the verb is finished. At the point where the pointer sits at the internal argument node projected by the transitive verb *love*, the unfixed node projected by the left-dislocated expression *Mary* can merge with this open Ty(e) node as shown in figure 2.7, since the two discrete nodes have a complementary relation: the former provides the formula value for the latter, while the latter provides the treenode address for the former.

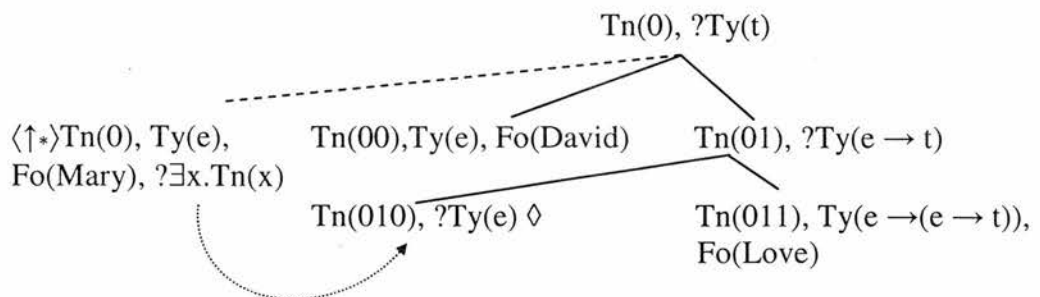


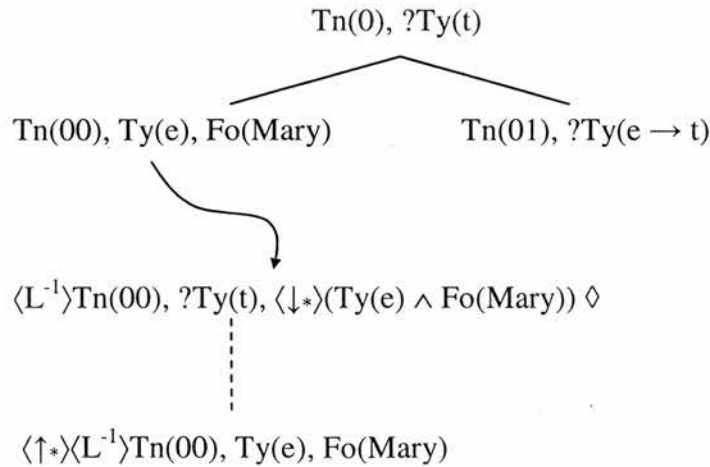
Figure 2.7: Parsing *Mary, David loves* with Merge

With the notion of unfixed node and the strategy of adjunction, the DS system can characterise not only the relation between two discrete nodes in one single tree, but also the relation between two discrete trees. A rule called LINK ADJUNCTION defines a transition from an initial tree with its root node annotated by some formula α of type e to some subsequent tree with its root node annotated by type t , by imposing a requirement on the second tree that the development of this new tree structure contain some node annotated by the formula α . As indicated in the formal definition (2.14), the output tree description contains a new root node with $?Ty(t)$, and below the new root node there should be some unfixed node whose type and formula is identical to the node in the input tree description.

(2.14) LINK ADJUNCTION

$$\frac{\{ \dots Tn(a), Ty(e), Fo(\alpha) \Diamond \}}{\{ \{ \dots Tn(a), Ty(e), Fo(\alpha) \}, \{ \langle L^{-1} \rangle Tn(a), ?Ty(t), ?\langle \downarrow * \rangle (Ty(e) \wedge Fo(\alpha)), \Diamond \} \}}$$

Note that the relation between the node in the initial tree and the root node in the second tree is some LINK relation, which is ensured by the imposition of a formula requirement on the LINKed tree development. Cross-linguistically, the LINK relation is one of the salient characteristics of a number of grammatical structures.⁵ A LINKed analysis, for instance, can be straightforwardly developed for the construal of relative clause structure in English like *Mary, whom David loves, is going to marry George*. The application of LINK ADJUNCTION is shown in figure 2.8, which illustrates a parse state subsequent to the processing of *Mary, whom*.



⁵ See Kempson et al 2001 for a detailed discussion of the LINKed structures.

Figure 2.8: Building a LINK transition from parsing *Mary, Whom*

The construction process proceeds in a standard fashion from the above tree, towards the building of a relative structure where the unfixed node will be eventually fixed in the gap position. The LINK transition rule, as will be discussed in Chapter 3, can apply to some Chinese grammatical constructions as well, in particular the topic construction.⁶

2.3.1.3 Thinning, Completion and Elimination

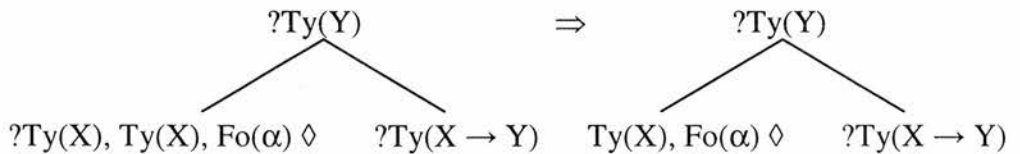
While the preceding subsections introduced the construction rules concerning unfolding of the tree, this subsection presents the rules dealing with completion of the tree. As is already known, the parsing process is a process of tree growth driven by requirements to specify underspecified information. To complete the tree, DS needs (i) a means of removing requirements when they are satisfied; (ii) a means of moving the pointer away from nodes when they are completed and (iii) a means of accumulating information established at daughter nodes to satisfy requirements on mother nodes.

To remove requirements once fulfilled, DS has a transition rule called THINNING which provides a means for stating that requirements have been satisfied, as formally defined in (2.15) in terms of tree descriptions and shown (2.16) in terms of tree growth.

(2.15) THINNING

$$\frac{\{ \dots \phi \dots ?\phi \dots, \diamond \}}{\{ \dots \phi \dots \diamond \}}$$

(2.16) Tree growth:



⁶ As will be seen in Chapter 3, the LINK transition rule will be entirely applied to English-style topic constructions in Chinese, and it will be slightly modified to accommodate Chinese-style topic constructions.

This rule provides a means of simplification of treenode decorations: if at a current node a DU holds that includes both a fact and the requirement to fulfil the fact, the requirement is deleted and the pointer remains at the current node. With the rule of THINNING, the parse of *Steve* in the string *Steve smokes*, for instance, results in the transition shown in figure 2.9.

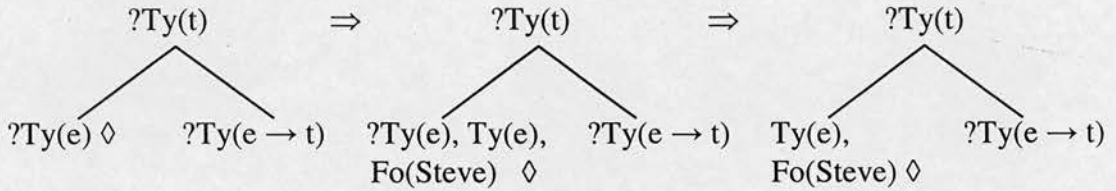


Figure 2.9: Parsing *Steve* with Thinning

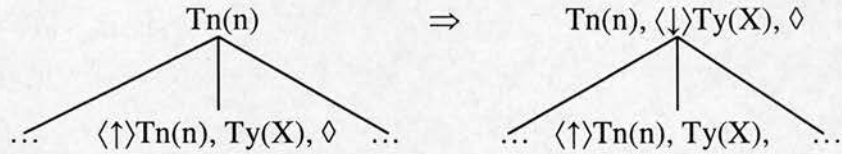
In general, the transition licensed by THINNING will not be displayed, assuming that it is applied whenever a task is finished.

To move the pointer away from nodes completed, DS has a rule called COMPLETION which states that if a daughter node holds information including an established type, then the mother node may become the current node, as formally defined in (2.17) in terms of tree descriptions and shown in (2.18) in terms of tree growth.

(2.17) COMPLETION

$$\frac{\{\text{Tn}(n)\dots\}, \{\langle \uparrow_i \rangle \text{Tn}(n), \dots, \text{Ty}(X), \dots, \diamond\}}{\{\text{Tn}(n), \dots, \langle \downarrow_i \rangle \text{Ty}(X), \dots, \diamond\}, \{\langle \uparrow_i \rangle \text{Tn}(n), \text{Ty}(X), \dots\}} \quad i \in \{0, 1\}$$

(2.18) Tree growth:



This rule licenses the movement of the pointer from a daughter to a mother and annotation of the mother node with the information that it indeed has a daughter with certain properties. It has the effect of satisfying the modal requirement imposed by

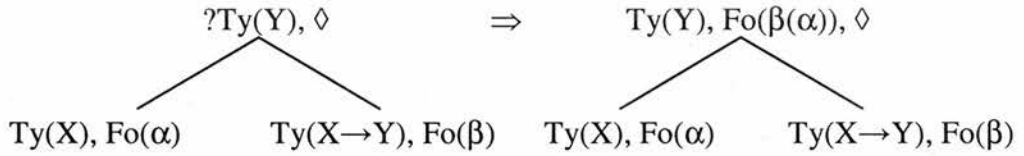
the rule of INTRODUCTION, and so can be regarded as the inverse of the rule of PREDICTION.

Finally, to accumulate information established at the daughter nodes for satisfying the requirements holding at the intermediate nodes, DS has a rule called ELIMINATION which states that if a mother node has two daughter nodes both annotated with a formula and a type value, the formulae on the two daughter nodes can combine by modus ponens, and then the resulting formula and type can annotate the mother node, as defined first in (2.19) and illustrated in (2.20).

(2.19) ELIMINATION

$$\frac{\{...\langle\downarrow_0\rangle(Ty(X), Fo(\alpha)), \langle\downarrow_1\rangle(Ty(X \rightarrow Y), Fo(\beta))\diamond\}}{\{...\{Ty(Y), Fo(\beta(\alpha)), \langle\downarrow_0\rangle(Ty(X), Fo(\alpha)), \langle\downarrow_1\rangle(Ty(X \rightarrow Y), Fo(\beta))\dots, \diamond\}\}}$$

(2.20) Tree growth:



This transition rule licenses the movement of the pointer to non-terminal mother nodes and performs functional application leading to the fulfilment of the outstanding requirements on these intermediate nodes. Supposing that the processing of the string *Steve smokes* reaches a state where both the subject and the verb have been successfully parsed. Applying the rule of ELIMINATION will result in the transition as shown in figure 2.10, where the root node of the right tree is decorated with the combination of its two daughters' information.

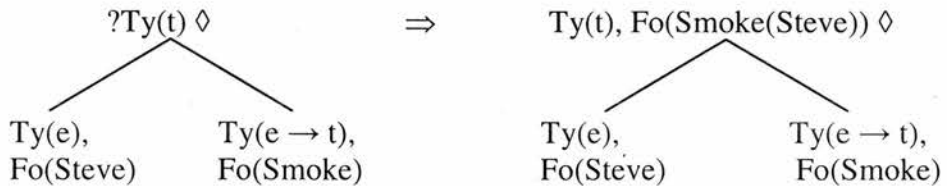


Figure 2.10: Parsing *Steve smokes* with Elimination

As can be seen, the construction of tree is a top-down process while the completion of tree is a bottom-up process. INTRODUCTION introduces **modal requirements** on the

top node which are satisfied through PREDICTION by building corresponding daughter nodes with **type requirements** which are removed through THINNING which indicates **fulfilment of requirements** which leads through COMPLETION to the introduction of modal statements at the mother nodes; the goal of building a representation as interpretation is achieved through ELIMINATION. The computational rules introduced so far, however, must be combination with lexical information in the construction of propositional formula. The next section will introduce the role of lexicon in the parsing process.

2.3.2 *lexical actions*

Computational rules introduced in the preceding section provide the general format of tree descriptions whose informational content is largely provided by actions encoded in lexical entries which are accessed as words are processed. Lexical information, as pointed out in section 2.1, is therefore assigned an important role within the framework of DS. Since the goal of natural language processing is building representations of content, its achievement naturally relies on the contribution of lexicon which provides specific instructions on how to construct an interpretation.

The structure of lexical entries interacts with the general format of tree descriptions. Actions encoded in lexical entries often result in decoration of nodes, creation of new nodes and movement of the pointer. Within the machinery of DS, lexical actions include a few instructions such as (i) **make** (...) which creates a new node; (ii) **go** (...) which moves the pointer to the node specified in the value; (iii) **put** (...) which decorates a node with certain information. A general format of lexical entries encoding a series of actions is given in (2.21).

(2.21) FORMAT OF LEXICAL ENTRIES

IF		Trigger
THEN	...	Actions
ELSE	...	Elsewhere Statement

A lexical entry is presented as a conditional statement. The initial condition, providing the context under which subsequent development takes place, is a trigger

that induces the parse of the word. This usually takes the form of a type requirement, as shown above, but as will be shown later in analyses, other information may also make suitable triggers. The IF conditional statement being met, the THEN statement specifies the set of actions involving the instructions mentioned above. The ELSE statement induces other actions if the IF condition is not met, which is in general an instruction to abort the current parse. The lexical entry for the intransitive verb *smoke*, for example, can be stated as follows.⁷

IF ?Ty($e \rightarrow t$)

(2.22) *smoke* THEN put(Ty($e \rightarrow t$), Fo(Smoke), [\downarrow] \perp)

ELSE ABORT

The condition for introducing the lexical information from *smoke* is that the parsing of this verb is triggered by a context in which there is a predicate requirement ?Ty($e \rightarrow t$). If this condition is met, the current node is then annotated with the type and formula information specified. The parse of transitive verbs (also with tense information) will be demonstrated in the next section.

2.3.3 A basic example

Let us take the parse of a simple sentence *David loves Mary* and see how the step-by-step process of tree growth is expressed in the DS system. The parse starts from introducing the root node of a tree by Axiom, which is annotated with a propositional requirement; then the rule of INTRODUCTION can apply and introduces two modal requirements on the root node; by the rule of PREDICTION, the two daughter nodes can be built. These three steps are shown in figure 2.11, where the pointer moves down to the open argument node, requiring it to be developed next.

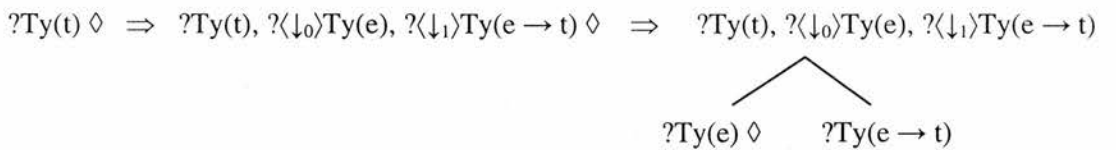


Figure 2.11: Expanding the tree

⁷ The annotation [\downarrow] \perp is the bottom restriction which takes the form “at all nodes below, the falsum holds”. It simply means that the node constructed cannot be further developed.

At this stage, it is the lexical items' turn to contribute information to tree building. The subject NP *David* is first of all parsed, whose lexical entry is specified in (2.23).

(2.23) Lexical entry for *David*

IF	?Ty(e)	Trigger
THEN	put(Ty(e), Fo(David), [\downarrow] \perp)	Annotation
ELSE	ABORT	Failure

The lexical information from *David* meets the requirement on the open argument node for a type e expression, namely the condition in the IF clause. So the pointed argument node can be annotated with the type value $Ty(e)$ and the formula value $Fo(David)$, as shown in the left tree below. At this stage, the rule of THINNING can apply to remove the requirement, as shown in the right tree below.

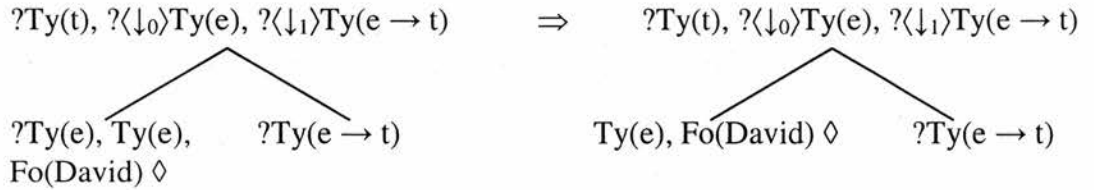


Figure 2.12: Parsing *David* with Thinning

Since the argument daughter is now a type-complete node, the rule of COMPLETION can apply and the pointer can move up to the root node, the mother node. The information established at the argument node can then be added to the mother node, as shown in the left tree below. The rule of THINNING can apply again to remove the requirement $?\langle\downarrow_0\rangle Ty(e)$, as shown in the right tree below.

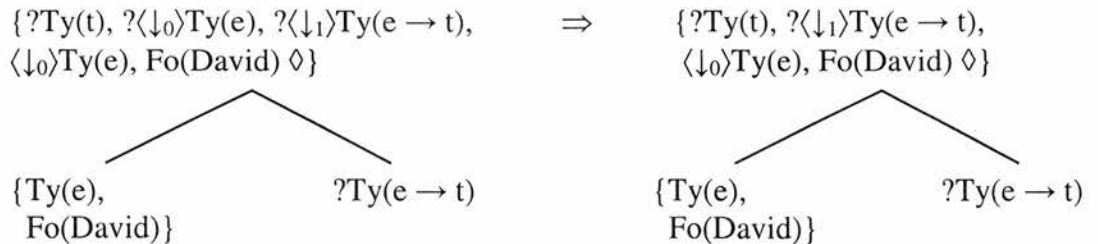


Figure 2.13: Completion and Thinning at the top node

At this point, the pointer moves to the functor node, requiring it to be developed, as shown in figure 2.14:

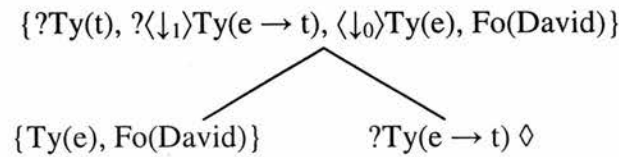


Figure 2.14: Construction of the predicate node

The next step is to parse the verb, which induces again a sequence of actions as shown in the lexical entry for *loves* in (2.24).

(2.24) Lexical entry for *loves*

IF	$?Ty(e \rightarrow t)$	Predicate trigger
THEN	$go(\langle\uparrow_1\rangle ?Ty(t),$	Go (up) to propositional node
	$put(Tns(PRES)),$	Tense information
	$go(\langle\downarrow_1\rangle ?Ty(e \rightarrow t)),$	Go (back) to predicate node
	$make(\langle\downarrow_1\rangle),$	Make a functor node
	$go(\langle\downarrow_1\rangle),$	Go (down) to the functor node
	$put(Ty(e \rightarrow (e \rightarrow t)), Fo(Love), [\downarrow]\perp)$	Annotation
	$go(\langle\uparrow_1\rangle)$	Go (back) to predicate node
	$make(\langle\downarrow_0\rangle),$	Make an argument node
	$go(\langle\downarrow_0\rangle)$	Go (down) to the argument node
	$put(?Ty(e))$	Annotation
ELSE	ABORT	

The predicate requirement on the pointed node triggers the parsing of the verb, so the current task state is $?Ty(e \rightarrow t)$. Then the pointer moves from the predicate node to the dominating propositional node, given by the instruction $go(\langle\uparrow_1\rangle ?Ty(t))$, and annotates it with the tense information $Tns(PRES)$. After that, the pointer returns to the open predicate node, given by the instruction $go(\langle\downarrow_1\rangle ?Ty(e \rightarrow t))$. What follows is the actions induced by the lexical semantics of *love*: as a transitive verb it creates its

own node, a two-place predicate decorated with the type and formula information. In addition, it also creates an internal argument node (through the rule of PREDICTION). The effect of these actions is shown in figure 2.15, where the pointer moves to the internal argument node subsequent to the construction of the new functor node.

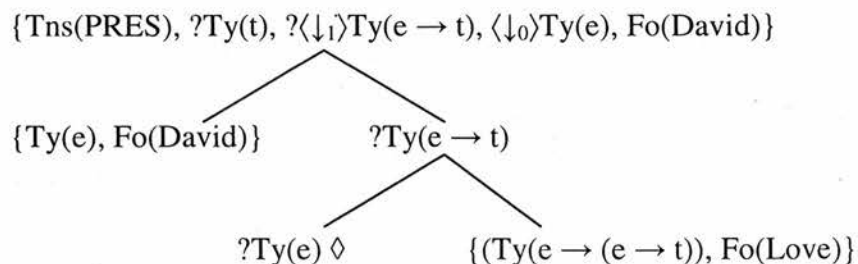


Figure 2.15: Parsing *David loves*

With the pointer at the open argument node, the parsing of *Mary* as lexical input is triggered:

(2.25) Lexical entry for *Mary*

IF	?Ty(e)	Trigger
THEN	put(Ty(e), Fo(Mary), [↓]⊥)	Annotation
ELSE	ABORT	Failure

Same as the subject NP, the lexical information from this object NP, which satisfies the requirement $?Ty(e)$ on the node to be developed, can be introduced into the tree. Through the rule of THINNING the pointed node is decorated with the type and formula information as shown below.

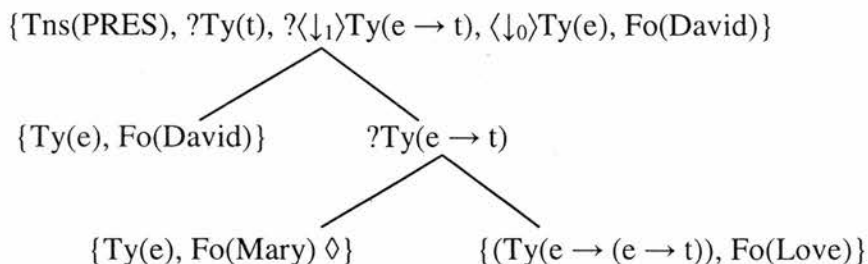


Figure 2.16: Parsing *Mary* with Thinning

At this stage, all lexical information has been processed, but there are still outstanding requirements on the intermediate nodes, as can be seen in figure 2.16. The parsing process can be finished through the rule of **ELIMINATION** which performs functional application of functors over arguments, yielding expressions satisfying requirements associated with intermediate nodes. The first step is to move the pointer up to the one-place predicate node where **ELIMINATION** can apply: the values of its two daughter nodes, the internal argument node and the two-place predicate node, can be combined. The compilation of the information gathered at the two daughter nodes fulfills the requirement $?Ty(e \rightarrow t)$ at their mother node, which is removed as shown in figure 2.17.

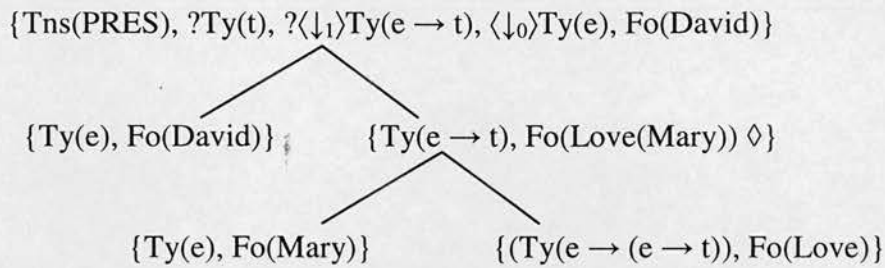


Figure 2.17: Elimination at the predicate node

Finally, the rule of **COMPLETION** applies to the root node. The pointer is licensed to move from the functor node to the top node which can then be annotated with its predicate daughter's information, as shown in figure 2.18.

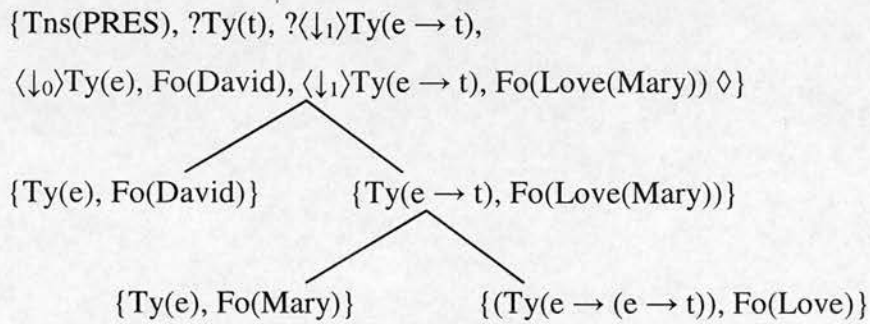


Figure 2.18: Completion at the root node

Through the rule of **THINNING**, the modal requirement $?\langle\downarrow_1\rangle Ty(e \rightarrow t)$ at the root node is then removed. Through the rule of **ELIMINATION**, the parsing of *David loves Mary*

ends with the final tree in figure 2.19, the root node of which is decorated with a propositional formula representing the interpretation of the whole sentence.

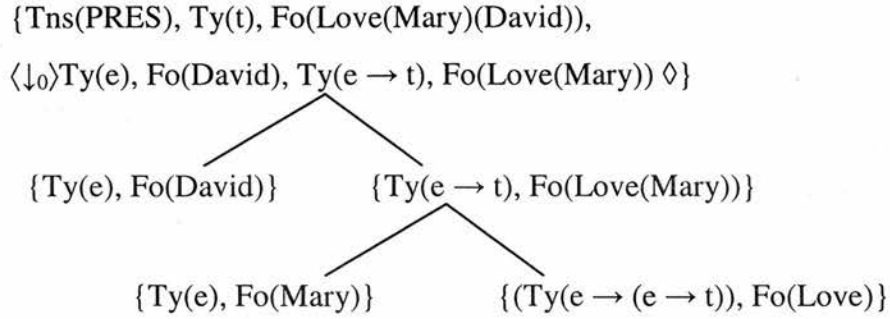


Figure 2.19: The final result of parsing *David loves Mary*

The last outstanding requirement $?Ty(t)$ at the root node of the final tree is eliminated, since it has been fulfilled by the fact that the parse of the sentence yields a complete propositional formula $(Love(Mary)(David))$. The parsing process shows that the building of a structure representing semantic interpretation is goal-directed through a left-to-right dynamics, involving transitions between the input and output structures which is achieved by computational rules in conjunction with lexical information.⁸ This is not the whole story, though. In the next section, I shall introduce the role of pragmatics in the parsing process.

2.3.4 Pragmatic actions

As mentioned at the beginning of this section, DS also allows pragmatic actions a role in the parsing process, which can be illustrated by the processing of anaphoric expressions, the assignment of interpretation to a pronoun. Given the general stance that words project lexical actions in constructing representations of content as established in context, DS treats pronouns as place-holders for logical expressions which have been constructed within the context, reflecting the fact that pronouns contribute in a different way to interpretation depending on their antecedents.

With the notion that pronouns pick out some logical terms from context, DS extends the vocabulary of its formula values to allow place-holders for values. Hence

⁸ In the remainder of the study, I shall not display the parsing process in detail, but instead focus on the building of tree structure.

pronouns are construed as projecting metavariables represented as boldface capitals **U**, **V**,..., which are just formula labels awaiting to be replaced by some contentful values. Since a metavariable is just a place-holder for some contentful value, it is always associated with a requirement to find such a value, $\exists x.Fo(x)$, which ensures that the metavariable will be substituted by some proper representation as part of the construction process. The substitution process is pragmatic in the sense that it is strictly context-dependent.

Consider the parse of the conjunct clause in the utterance *David loves Mary, but she hates him*. In processing the first pronoun, the subject node of the clause, we derive the information that ‘she’ requires to be identified with a referent that can be attributed with female properties. This constraint, which has certain presuppositional effects, can be shown as a subscript on the metavariable, U_{Female} . In addition, we also derive the information that ‘she’ as a nominative pronoun only occurs in the subject position. This further constraint can be shown as a requirement to be immediately dominated by a propositional node, apart from the requirement to find a contentful value for the metavariable (cf: Cann et al, in press). The lexical specification of *she* can therefore be given as follows.

(2.26) *She*

IF	$?Ty(e)$	Argument trigger
THEN	$put(Ty(e),$	Type statement
	$Fo(U_{Female}),$	Metavariable and presupposition
	$\exists x.Fo(x),$	Formula requirement
	$?(\uparrow_0)Ty(t),$	Case condition
	$[\downarrow]\perp)$	Bottom restriction
ELSE	ABORT	

Construed in the context provided by the above utterance, substitution will determine that the metavariable U_{Female} can only pick out the logical term $Fo(Mary)$ established in the first clause. The pragmatic process of substitution can be illustrated by figure

2.20 which shows a transition from parsing the pronoun *she* to instantiating the metavariable.

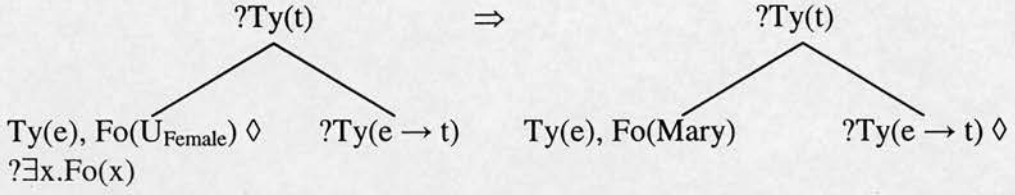


Figure 2.20: Parsing *she* and substituting *Fo(Mary)*

The underspecified formula of the subject node being resolved, the pointer moves to the predicate node through COMPLETION, allowing the parse of the verb *hates*, as shown by the right tree in figure 2.20. The lexical actions given by this transitive verb, like those projected by *love* in the preceding subsection, result in creating an internal argument node as well as a two-place predicate node with both type and formula values. Finally the pointer moves to the open argument node, requiring it to be developed next. The parse of the second pronoun *him* just satisfies the type requirement on the pointed node, but leaves a formula requirement, as shown in the left tree in figure 2.21. Again given the context in which the utterance is uttered, the metavariable U_{Male} projected by *him* can only be replaced by the logical term *Fo(David)* constructed in the first clause, as shown by the right tree in figure 2.21.

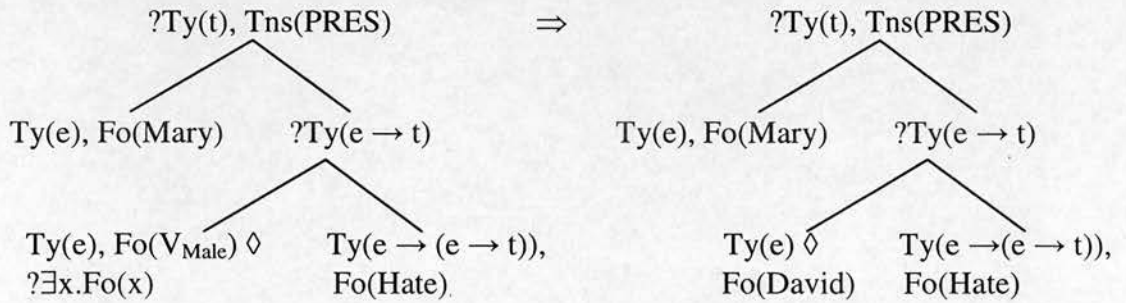


Figure 2.21: Parsing *him* and substituting *Fo(David)*

One bonus of the discussion of formula underspecification here is that the concepts introduced may constitute the basis for the characterisation of pro-drop in Chinese. As mentioned in Chapter 1, Chinese freely omits arguments when they can be clearly

recovered from the context. All the following strings, for example, are grammatical in appropriate circumstances:

- (2.27) a. *Zhangsan da le Lisi.*
 Zhangsan beat PFV Lisi
 ‘Zhangsan beat Lisi.’
 b. (Who did Zhangsan beat?)
 da le Lisi.
 c. (Who beat Lisi?)
 Zhangsan da le.
 d. (Did Zhangsan beat Lisi?)
 da le.

This freedom of omitting arguments can be accounted for by allowing a ‘free-ride’ set of lexical actions that allow for any type *e* argument to be satisfied by the postulation of a metavariable just in case the relevant node is a terminal one.

(2.27) Pro-drop in Chinese

IF		$(?Ty(e) \wedge \langle \uparrow \rangle T)$
THEN	IF	$\langle \downarrow \rangle T$
	THEN	ABORT
	ELSE	$put(Ty(e), Fo(U), ?\exists x.Fo(x), [\downarrow]\bot)$

Such an analysis freely allows the pro-drop examples above, by ensuring that the open argument nodes are decorated by a metavariable whose value is instantiated through pragmatic substitution depending on context. Note that the analysis of Chinese pro-drop is different from that of Spanish and Greek pro-drops adopted in Cann et al (in press) in which verbs project a propositional template where argument nodes are decorated with metavariables. Spanish and Greek are subject pro-drop languages where verbs are strongly inflected for subject-verb agreement; one can reconstruct the pronoun from the form of the verb and therefore it is reasonable to have the verb project the propositional template. In Chinese, there is no agreement of

verbs at all and so both subject and object pronouns can be dropped. As shown in (2.27), pro-drops in Chinese are really like pronouns and therefore must be analysed as having a bottom restriction.

2.4 Simple clause structure in Chinese⁹

The preceding section introduces the framework of Dynamic Syntax, based on the discussion of the dynamics of language with special reference to English. This section will present a general analysis of the simple sentence in Chinese by means of the rules and concepts introduced above. Although it displays a considerable freedom in terms of word order, as discussed in Chapter 1, Chinese could be crudely characterised as an SVO language, where the verb usually follows the subject and precedes the object. This seems to be quite reasonable with respect to simple sentence structure.

We would, however, have some trouble specifying the type of verbs in Chinese if we adopt exactly the same approach to the parsing of verbs sketched above for English. Recall that in Chinese there exist some adjunct NPs which appear to be syntactically on a par with nominal expressions and semantically sort of obligatory and which both transitive and intransitive verbs can take. These adjunct NPs, as exemplified by (1.16)-(1.18), repeated here as (2.29)-(2.31), tend to blur the distinction between arguments and adjuncts.

(2.29) *Lisi pao le (Beijing) ji-tang.*

Lisi run PFV Beijing several-times

‘Lisi has made several trips (to Beijing).’

(2.30) *Wangwu deng le (ni) ban-tian.*

Wangwu wait PFV 2SG half-day

‘Wangwu waited (for you) for a long time.’

(2.31) *Zhangsan chi le yi-bu.*

Zhangsan late PFV one-step

‘Zhangsan was a bit late.’

⁹ The discussion presented in this section is based on Cann and Wu (2003).

This sort of phenomenon is not particular to Chinese. As has been noticed and argued by a number of authors (e.g. McConnell-Ginet 1982, Chierchia 1989, Grimshaw 1990, Jackendoff 1990, Hukari & Levine 1995), the argument-adjunct distinction is not a clear-cut, because some adjuncts behave like arguments while some arguments behave like adjuncts. Following recent work in HPSG, Marten (2002) takes a dynamic approach to verbal underspecification by treating adjunct expressions as optional arguments. He proposes that from a dynamic perspective all verbs are underspecified with regard to the number of ‘internal’ arguments and ‘optional’ arguments (i.e. arguments and adjuncts in the traditional sense). Hence he postulates that all verbs are introduced with an underspecified type which can be represented as follows:

(2.32) $(e^* \rightarrow t)$

The verbal underspecification is thus formalised through the Kleene star operation in which e^* is defined over types already employed. So verbs may be instantiated as having variable types, including $Ty(t)$, $Ty(e \rightarrow t)$, $Ty(e \rightarrow (e \rightarrow t))$, $Ty(e \rightarrow (e \rightarrow (e \rightarrow t)))$ and so on.¹⁰ To solve the problem of the verbal type underspecification in Chinese, we can adopt Marten’s dynamic approach, with the slight difference that the number of a verb’s ‘internal’ arguments is specified: intransitive verbs are thus $Ty(e^* \rightarrow (e \rightarrow t))$ and transitive verbs $Ty(e^* \rightarrow (e \rightarrow (e \rightarrow t)))$. In parsing a sentence, therefore, it is only when the whole postverbal material has been parsed that a verb’s type can be resolved (see Marten 2002 for details).¹¹

¹⁰ One of the consequences of Marten’s analysis of verbal underspecification is that arguments and adjuncts will not be type-distinguished, but variation in order will be reflected in order of function-application, so that the resulting output may not be identical, as will be shown in this and the subsequent chapters.

¹¹ It should be pointed out that Marten (2002) does not provide an analysis of proper adverbs. With regard to the Chinese clause, while Marten’s proposal can apply very well to the postverbal domain, it would have some problems extending to the preverbal domain. Consider the following examples where the adverb and the PP occur in their canonical position, the preverbal position.

- (i) *Wangwu jintian zai jiuba da le Lisi yi-dun.*
Wangwu today in pub beat PFV Lisi one-time
‘Wangwu beat Lisi once in the pub today.’
- (ii) *Lisi keneng zai huayuan jiao guo liang-ci hua.*
Lisi possibly in garden water EXP two-time flower
‘Lisi possibly watered the flowers twice in the garden.’

One of the consequences of this move is that verbs must be parsed as decorating an initially unfixed node within the tree which is fixed once the number of arguments is determined. The effect of adopting such a rule in the parsing of verbs can be illustrated in figure 2.22, which shows derivation from a tree with an open predicate requirement with no daughters to another tree that has an unfixed node dominated by the open predicate node that carries a requirement for a predicate of underspecified arity.

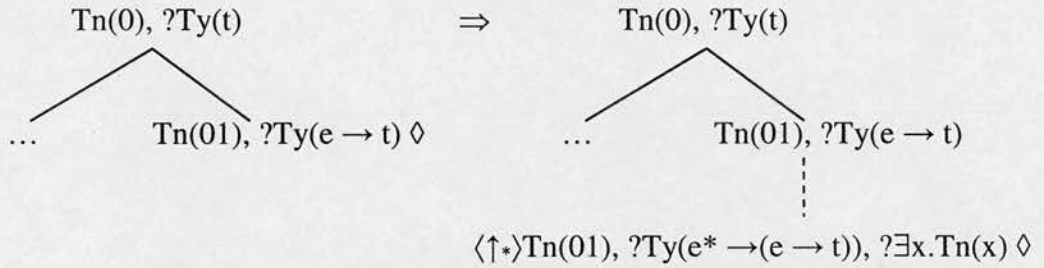


Figure 2.22: Unfixed predicates

As an illustration, we can take the parse of (2.29) as an example. Through the general construction rules INTRODUCTION and PREDICTION the partial tree with only a root node expands to have subject and predicate nodes, allowing the parse of *Lisi*. After the subject node is developed, the pointer moves to the open predicate node, allowing the parse of the verb *pao-le* whose lexical entry can be stated as follows:¹²

IF ?Ty($e \rightarrow t$)

(2.33) *pao-le* THEN go($\langle \uparrow_1 \rangle$), put(ASP(PFV)), go($\langle \downarrow_1 \rangle$);

make($\langle \downarrow^1_* \rangle$), go($\langle \downarrow^1_* \rangle$), put(Ty($e^* \rightarrow (e \rightarrow t)$), Fo(Pao), [\downarrow] \perp);

ELSE ABORT

These preverbal adjuncts might be feasibly analysed as predicate functors projecting a node of Ty($(e \rightarrow t) \rightarrow (e \rightarrow t)$), since the parse of the verb is taken throughout the thesis to be invariably triggered by ?Ty($e \rightarrow t$). I shall leave a detailed exploration of this issue for future research.

¹² There is a technical problem with having the verb project an unfixed node: DS only allows one really unfixed node at a time. However, we may get around this by imposing a different sort of modality $\langle \downarrow^1_* \rangle$ on unfixed predicate nodes which are in any case only very locally unfixed. This restricts the unfixed node to decorating the main functor in the local domain.

Subsequent to the parse of the verb, the pointer returns to the open main predicate node. At this point, if there is no further information as in the intransitive construction *Lisi pao le*, the unfixed node would combine with the predicate node through MERGE to yield a tree whose completion would give rise to a propositional formula $Pao(Lisi)$. However, the incoming information requires the parse to carry on. The general rules INTRODUCTION and PREDICTION apply again to create two daughter nodes. Following convention, the pointer moves down to the argument daughter, allowing the parse of *Beijing*. Figure 2.23 shows the parse state where the pointer is at the two-place predicate node.

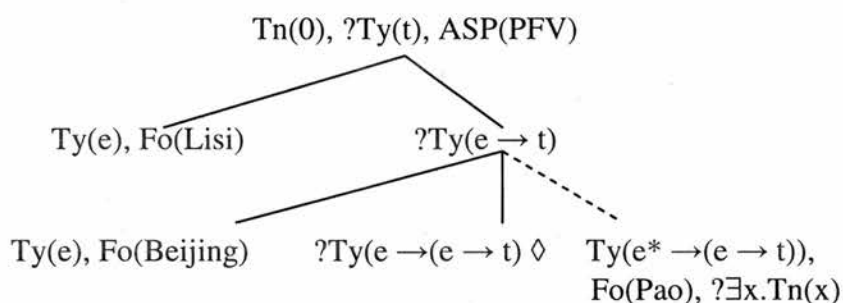


Figure 2.23: Parsing *Lisi pao le Beijing*

At this point, if the string is complete as in *Lisi pao le Beijing*, the unfixed node would merge with the node pointed at and the tree would yield a propositional formula $Pao(Beijing)(Lisi)$. This is not the case, though. The lexical input *ji-tang* 'several times' drives the parse along, and the two-place predicate node extends through the two general construction rules once again to have its own daughter nodes. This permits the parse of the last word and the pointer then moves to the three-place predicate node at which point the unfixed node merges, yielding a tree as in figure 2.24 whose compilation will give a propositional formula $Pao(Ji-tang)(Beijing)(Lisi)$.

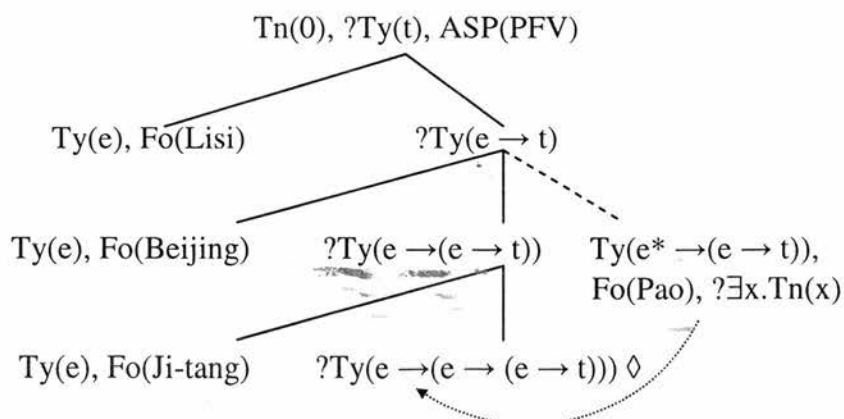


Figure 2.24: Parsing *Lisi pao le Beijing ji-tang*

Before closing this section, I would say a brief word about noun phrase interpretation in Chinese. As noted above, all noun phrases in DS are construed as projecting content of type *e*. Given that bare noun phrases in Chinese may appear in any argument position as full noun phrases, as discussed in Chapter 1, a decision needs to be taken with respect to the representation of the content of such expressions which can be interpreted as definite, indefinite or generic with respect to context, as illustrated in (2.34).

(2.34) *Lisi jian le toufa.*

Lisi cut PFV hair

‘Lisi cut some hair.’

‘Lisi cut the hair.’

‘Lisi cut hair.’

We can take up the proposal of Chierchia (1998) that bare nouns in Chinese should be analysed as projecting expressions of type *e*, and that they should be interpreted as kinds rather than properties. Here I shall not go into details of interpretation in different contexts and with regard to the interaction with classifiers. However, certain elements in conjunction with a classifier, such as demonstratives, have an individuating function, denoting functions from kinds to individual entities. Other factors also tend towards an individuating interpretation. So subjects would tend to pick out individuals rather than kinds as would the objects of certain verbs. Nevertheless, such interpretations are context-dependent and we shall see in the subsequent chapters, Chapter 4 in particular, how local context can affect the way a bare noun is interpreted.

2.5 Summary

In this chapter, I have presented a general introduction to the framework of Dynamic Syntax and have demonstrated how this linguistic formalism allows the interaction between three types of action, computational, lexical and pragmatic, in the dynamic process of natural language interpretation, and how the characterisation of the

parsing process constitutes a basis for explanations of structural properties. Furthermore, I have extended the analysis from English data to Chinese data and provided a preliminary analysis of simple clause structure in Chinese. With the DS machinery introduced in this chapter, I shall in the chapters that follow, investigate complex grammatical constructions in Chinese and demonstrate that the structural properties of Chinese can be characterised through the dynamics of language processing.

PART ONE LEFT DISLOCATION

In this part, I shall investigate three key grammatical structures in Chinese from a dynamic perspective, namely topic, passive and emphatic constructions, and shall demonstrate that structurally all display left-periphery effects which involve a noun phrase dislocated to the left boundary of the clause. As will be shown, the left-periphery effects of these linguistic structures can be successfully characterised by means of the two construction rules *Adjunction and LINK Adjunction introduced in Chapter 2. Hence the three constructions should be generally considered to be left-dislocation structures.

Specifically, topic constructions in Chinese display left-periphery effects in an obvious fashion, though the left-dislocated expressions show some informational distinctions – some are topic, and some are focus. From the dynamic perspective, the anaphoric relation between topic and comment in English-style topic structure, and the aboutness relation between topic and comment in Chinese-style topic structure, are characterised in a simple and elegant way.

Chapter 4 addresses passive constructions in Chinese which also display, though slightly less obviously, left-periphery effects. The patient NP marked by the passive particle *bei* is dislocated at the left periphery of the sentence and behaves like a topicalised focus, the properties of which are discussed in Chapter 3.

As for the emphatic construction in Chapter 5, it very often involves a noun phrase dislocated at the left periphery of a clausal sequence. The left-peripheral expression preceding the type-ambiguous copula *shi* is actually a topicalised constituent which is either syntactically or semantically linked to the postcopular clause, hence the anaphoric or aboutness relation between the pre-*shi* topic and the post-*shi* comment.

Chapter 3

Topic Constructions

3.1 Introduction

The topic-comment dichotomy is an alternative binary characterisation of sentence structure to the subject-predicate distinction found in traditional linguistics (cf. Crystal 2001). As for the topic construction in Chinese, it has attracted a great deal of attention since Chao (1968: 69) made the famous statement in his classic work that ‘the grammatical meaning of subject and predicate in a Chinese sentence is topic and comment, rather than actor and action’. Chao’s equation of subject with topic has caused a lot of discussion regarding the relation between these two grammatical notions. A resulting dichotomy is topic-prominence versus subject-prominence, which has been frequently used in the literature to distinguish languages like Chinese from languages like English typologically (C. Li & Thompson 1976). While there is a consensus nowadays that both topic and subject exist in Chinese as two distinct notions, there is also a general agreement that topic structure figures prominently in the overall grammar of such a language. The prominence of topic in Chinese can be characterised by the variety of topic constructions, as exemplified below, where parentheses indicate optionality.¹

(3.1) a. *Zhangsan zhuren ma guo (ta).*

Zhangsan head scold EXP 3SG

¹ As has been pointed out by Chao (1968) and discussed by (Tsao 1979), the topic, but not the subject, may be separated from the rest of the construction by a pause particle such as *a*, *ba*, *me*, *ne* and *ya*, or a pause tone. According to Chao, the pause particles may be translated into English *as for*. Also, it should be noted that these pause particles, albeit temporarily being ignored in exemplifying topic constructions for the sake of convenience, are preferably used in speech by native speakers, and their linguistic significance will be discussed in section 3.3, since the use of them would result in different information-structural meanings of the expressions marked by them. Additionally, there are also nuances in meaning between the above-mentioned particles, which will also be ignored here, since I am chiefly concerned with the syntactic characterisation of topic constructions.

‘Zhangsan, the head scolded (him).’

- b. *Zhangsan zhuren ma guo zhe jiahuo.*

Zhangsan head scold EXP this guy

‘Zhangsan, the head scolded the guy.’

- (3.2) a. *Zhangsan Lisi zhidao zhuren ma guo (ta).*

Zhangsan Lisi know head scold EXP 3SG

‘Zhangsan, Lisi knows that the head scolded (him).’

- b. *Zhangsan Lisi zhidao zhuren ma guo zhe jiahuo.*

Zhangsan Lisi know head scold EXP this guy

‘Zhangsan, Lisi knows that the head scolded the guy.’

(3.1)-(3.2) are two sets of sentences all of which contain a single topic, though there exists a difference between them. In (3.1) the topic expression *Zhangsan* is associated with an empty element in the comment clause, and a pronoun and a full lexical NP respectively; in (3.2) the topic expression *Zhangsan* in the main-clause topic position is associated with an empty element, a pronoun and a full lexical NP in the subordinate clause nested in the whole comment. In general, Chinese topic constructions of this sort bear a resemblance to their English counterparts in that they encode the topic-comment relation in a syntactic fashion. Yet compared with English, Chinese seems to enjoy more freedom in coding the relation, as can be demonstrated below.

- (3.3) a. *Zhangsan Lisi xiang zhidao shui ma guo (ta).*

Zhangsan Lisi want know who scold EXP 3SG

‘Zhangsan, Lisi wonders who scolded *(him).’

- b. *Zhangsan Lisi xiang zhidao shui ma guo zhe jiahuo.*

Zhangsan Lisi want know who scold EXP this guy

‘Zhangsan, Lisi wonders who scolded the guy.’

- (3.4) a. *naxie shu xuesheng du guo hen qiguai.*

those book student read EXP very strange

Lit. ‘That those books students have read is strange.’

Lit.*‘Those books, it is strange that students have read.’

b. *zhexie cuo laoshi fan le ye keneng.*

these error teacher commit SFP also possible

Lit.‘That these errors teachers commit is also possible.’

Lit.*‘These errors, it is also possible that teachers commit.’

The set of sentences in (3.3)-(3.4), albeit the same as (3.1)-(3.2) with respect to the number of topics, display distinct structural properties. The sentences in (3.3) contain a *wh*-word and their grammaticality at least suggests that topicalisation in Chinese is not subject to the *wh*-island condition; moreover, topicalisation in Chinese is not subject to the sentential-subject condition either, as shown by the ambiguous sentences in (3.4) where the topic can be analysed as appearing in the topic position of the sentential subject, as indicated by the first translation, or occurring in the topic position of the main clause, as indicated by the second translation.²

This is not the whole story, however. In what follows we can see multiple topic constructions in a single sentence, as exhibited in (3.5) where two separate topic constituents are associated with two separate elements in one simple comment clause and also in (3.6) where two distinct topic expressions, occupying the topic position of the main and subordinate clauses respectively, are related to distinct elements. Needless to say, the order of topics is determined by the degree of prominence and, as pointed out by Xu & Langendoen (1985), speakers may have some difficulty accepting a sentence with three or more topics,³ because the constraint on the quantity of topics in one sentence is certainly a matter of pragmatics, i.e. the attempt to emphasise a lot of

² The ambiguity of sentences like (3.4) can be attributed to the fact that Chinese lacks both complementisers and expletive pronouns like those in English. However, topic constructions in Chinese, as pointed out in footnote 1, are in general marked either morphologically or phonologically. Therefore in actual speech, native speakers would resolve the ambiguity in sentences like (3.4) by adding either a pause particle or a pause tone after the initial expression, indicating that it is the topic of the main clause. Otherwise, the dislocated expression is interpreted as the topic of the sentential subject.

³ As will be shown shortly, three or even more topics are allowable in some cases. Based on related research, Yuan (1996) shows that a multiple topic structure like $Top_1 + Top_2 + \dots + Top_n + VP$ can maximally contain 5 topics. And in English-style topic constructions, one or two of the topics are quite often temporal or locative NPs, or in Yuan's terminology, situational cases.

things at one time would probably result in failure to emphasise anything.

- (3.5) a. *zhe-men ke Zhangsan wo jiao le.*

this-CL course Zhangsan 1SG teach PFV

Lit. 'This course, Zhangsan I taught.'

- b. *na-ben shu Zhangsan wo tuijian guo.*

that-CL book Zhangsan 1SG recommend EXP

Lit. 'That book, Zhangsan I have recommended.'

- (3.6) a. *Lisi wo gaosu le (ta) na-ge defang wo qu guo.*

Lisi 1SG tell PFV 3SG that-CL place 1SG go EXP

Lit. 'Lisi, I told (him) that that place I have been to.'

- b. *Lisi wo tongzhi le (ta) zhe-ci juhui wo hui lai.*

Lisi 1SG inform PFV 3SG this-CL party 1SG will come

Lit. 'Lisi, I informed (him) that this party I would come to.'

The presentation of topic constructions in Chinese so far is based on a fundamental assumption that the topic constituent is in a predication relation with the comment clause in the sense of Williams (1980). Syntactically, a position in the comment, lexicalised or non-lexicalised, is anaphorically related to the constituent in the topic position. Topic constructions presented above, according to Chafe (1976), can be classified as English-style topic constructions since the topic is subcategorised by the verb. In addition, Chinese has a special type of topic construction, first termed Chinese style by Chafe and later found in the literature, in which a topic just specifies a frame of reference for the following comment where no element is co-indexed with the one in the topic position.

- (3.7) a. *jiu-ge miyu Lisi caidui le liu-ge.*

nine-CL riddle Lisi resolve PFV six-CL

'Of nine riddles, Lisi resolved six.'

- b. *yuyanxue Zhangsan pianai yuyixue.*

linguistics Zhangsan prefer semantics

‘As for linguistics, Zhangsan prefers semantics.’

c. *shenghuo Wangwu xihuan xiao chengshi.*

life Wangwu like small city

‘As for life, Wangwu loves towns.’

(3.8) a. *zuqiu, Baxi qiuyuan, fenge youmei.*

football Brazil player style elegant

‘As for football, Brazilian players, (their) style is elegant.’

b. *Zhongguo Beijing mingsheng Changcheng zui zhuming.*

China Beijing places of interest Great Wall most famous

‘China, Beijing, places of interest, the Great Wall is the most famous.’

(Y. Huang 1994)

c. *Yingguo daxue Niujin Jianqiao xuesheng zhiliang gao.*

England university Oxford Cambridge student quality high

‘England, universities, Oxford and Cambridge, students, quality is high.’

There appears to be no coreference relation but an aboutness relation between the topic and comment, which is considered to be the constraint determining the acceptability of the relevant topic construction (e.g. Chao 1968, Chafe 1976, C. Li & Thompson 1981, Gundel 1988). The topic expression and the comment clause in (3.7a-c) are semantically and/or pragmatically related to each other, while in (3.8a-c), there exists a hierarchy between the topics in terms of domain: the initial or main topic sets the domain which is delimited by the subordinate topic(s) which further restricts the applicability of the predication.

The prominence of topic in Chinese, which has been illustrated thus far by a single sentence structure, can be evidenced by another significant fact that coreference across the clause often occurs in the discourse context. Consider the following English-style topic sentences, each of which contains two clauses with one of the clauses taken from (3.1)-(3.6).

- (3.9) a. *Zhangsan_i zhuren ma guo ta, ta_i ye ma guo zhuren.*
 Zhangsan head scold EXP 3SG 3SG also scold EXP head
 ‘Zhangsan, the head scolded him and he scolded the head, too.’
- b. *Zhangsan_i Lisi zhidao zhuren ma guo (ta), ta_i shi huaidan.*
 Zhangsan Lisi know head scold EXP 3SG 3SG is bad guy
 ‘Zhangsan, Lisi knows that the head scolded (him); he is a bad guy.’
- (3.10) a. *Zhangsan_i Lisi xiang zhidao shui ma guo ta, ta_i shi huaidan.*
 Zhangsan Lisi want know who scold EXP 3SG 3SG is bad guy
 ‘Zhangsan, Lisi wonders who scolded him; he is a bad guy.’
- b. *naxie shu_i xuesheng du guo hen qiguai, tamen_i shi jin shu.*
 those book student read EXP very strange 3PL are ban book
 ‘That those books students have read is strange; they are banned ones.’
 *‘Those books, it is strange that students have read; they are banned ones.’
- (3.11) a. *zhe-men ke_i, Zhangsan wo jiao le, e_i Lisi wo mei jiao.*
 this-CL course Zhangsan 1SG teach PFV Lisi 1SG not teach
 Lit. ‘This course, Zhangsan I taught; Lisi I didn’t teach.’
- b. *Lisi_i wo gaosu le ta na-ge difang wo qu guo, ta_i bu xiangxin.*
 Lisi 1SG tell PFV 3SG that-CL place 1SG go EXP 3SG not believe
 Lit. ‘Lisi, I told him that that place I have been to, but he didn’t believe.’

As for Chinese-style topic constructions, an expanded context would also require another clause to say something about the topic in the single topic sentence or the main topic in the multiple topic sentence. Consider (3.12)-(3.13) which are expanded from examples in (3.7)-(3.8).

- (3.12) *jiu-ge miyu_i, Lisi caidui le liu-ge, e_i tai rongyi le.*
 nine-CL riddle Lisi resolve PFV six too easy SFP
 ‘Nine riddles, Lisi resolved six; they are too easy.’
- (3.13) *zuqiu_i, Baxi qiuyuan, fenge youmei, e_i Ouzhou qiuyuan, fenge cukuang.*

football Brazil players style elegant Europe players style bold

‘As for football, Brazilian players, (their) style is elegant; European players, (their) style is bold.’

The topicalised element has to be related the second clause as well as the first one: apparently *tai rongyi le* ‘too easy’ in (3.12) provides information about the topicalised expression *jiu-ge miyu* ‘nine riddles’; similarly *Ouzhou qiuyuan* ‘European players’ refers to football players rather than European players of some other game, like basketball, and *fenge* ‘style’ refers to the style of football, rather than that of (say) basketball, due to the prominence of topic which as the frame of reference determines the development of conversation.

To summarise, I have presented a general picture of Chinese topic constructions which can be roughly classified into two types, English style and Chinese style. Both types of topic structure involve a noun phrase dislocated at the left periphery of the clause and hence display left-periphery effects in an obvious fashion. An in-depth analysis will require there to be a further classification of those characteristic of whether English style or Chinese style into two other types, that is, single topic structure and multiple topic structure. In the next section, I shall provide a critical review of the previous analyses of topic constructions in Chinese.

3.2 Previous analyses

3.2.1 *The Variable Analysis*

One proposal relating to the analysis of topic construction is the Variable Analysis of J. Huang (1982, 1984, 1987, 1989). Analogous to Chomsky’s account of the topicalisation process (Chomsky 1977), J. Huang (1984) proposes a COMP-to-COMP movement analysis based on his research on zero anaphors in Chinese, which postulates *wh*-movement of a null operator, i.e. an empty topic, to Comp or Spec of CP position, leaving a variable behind it. The central tenet of the variable analysis is that a

variable can be locally \bar{A} -bound by a null operator or an empty topic. Such a variable, namely a trace left by a fronted empty topic, can occur in both subject and object positions. When a zero anaphor occurs in subject position, it is treated either as \bar{A} -bound variable or as a *pro*, if the clause is assumed to be finite; or as a PRO if the clause is assumed to be non-finite. When a zero anaphor occurs in object position, it is treated either as an \bar{A} -bound variable or A-bound NP trace.

There are a number of problems with J.Huang's proposal, both theoretically and empirically, as has been argued by some researchers (e.g. Xu & Langendoen 1985; Xu 1986, 1987, 1994; Xu & Liu 1998; Y.Huang 1991, 1992, 1994, 2000). In the first place, the analysis of an empty category related to an element in TOP as a variable runs into a number of technical problems. As the study of Xu & Langendoen (1985) and Xu (1986) has shown, three arguments can be produced against the treatment of object-zero anaphors as variables: the relation between the zero anaphor and the topic does not obey island constraints and therefore is not subject to subjacency; the topic can simultaneously relate to more than one distinct gap, a violation of Koopman & Sportiche 1982's bijection principle⁴; the relation between the zero anaphor and the topic is not subject to the strong crossover condition (see Postal 1971), a condition that has subsequently been taken to be diagnostic for variable binding. The three arguments can be illustrated by examples (3.14)-(3.16) taken from Xu & Langendoen (1985):

(3.14) *zhege ren wo xiang zhidao shui jian huo.*

this-CL man 1SG want know who meet EXP

*'This man, I wonder who met.'

(3.15) *Li Ming wo yijing gaosu guo e_i ni bu xiang jian e_i le.*⁵

⁴ Koopman & Sportiche's bijection principle is as follows:

- a. Every A-position is locally bound by at most one \bar{A} -position;
- b. Every \bar{A} -position locally binds at most one A-position.

⁵ The particle *le* here is a sentence-final particle (SFP) that signals a 'currently relevant state' or 'a state of affairs has current relevance with respect to some particular situation' (C. Li & Thompson 1981: 239).

Li Ming 1SG already tell EXP 2SG not want see SFP

‘Li Ming, I have already told (him) that you don’t want to see (him).’

(3.16) *Xiao Ming_i ta_i yiwei mama yao zeguai e_i le.*

Xiao Ming 3SG think mother will blame SFP

*‘Xiao Ming, he thinks mother will blame him.’

In addition, as Y.Huang (1994, 2000) has pointed out, the empty topic analysis appears to pose a serious problem for the generally accepted assumption in Government-Binding theory that a null operator is moved to COMP or SPEC of CP and cannot co-occur with other operators, either overt or null (see Rizzi 1986). Consider the following example (3.17a) which is employed in J.Huang (1984) and from which (3.17b), taken from Y.Huang (1994), can be naturally derived.

(3.17) a. ϕ *kanjian* ϕ .

see

b. [_s o_1 o_2 [ϕ_1 *kanjian* ϕ_2]]

Both zero anaphors in (3.17a), according to J.Huang, are variables, each of which is \bar{A} -bound by a null operator, namely an empty topic respectively. If J.Huang were right, nothing would stop (3.17b) from being derived from (3.17a), since a variable can be locally \bar{A} -bound by a null operator or an empty topic. The occurrence of the two operators o_1 and o_2 in the COMP position, is obviously a violation of the ‘one null operator per COMP’ condition.

Empirically, J.Huang’s empty topic proposal runs counter to Chinese facts. As J.Huang (1984) himself is aware, an empty topic is a linguistic phenomenon occurring at the discourse rather than the sentence level, and can be licensed only if it is locally identified. The following typical example, which is drawn from Tsao (1977), shows that the empty topic requires the salience of the chain initial topic.

- (3.18) *neike shu, ø hua xiao, ø yezi da, ø hen nankan, (suoyi) wo mei mai ø.*
 that-CL tree flower small leaf big very ugly so 1SG not buy
 ‘The tree, (its) flowers are small; (its) leaves are big; (it is) very ugly; so I did not buy it.’

In each of the four sentences, there is a gap or zero anaphor which is co-indexed with the initial NP in the topic position. Moreover, the initial expression forms a topic-comment construction in isolation with any of the four sentences. Hence the four sentences share one identical topic *neike shu* ‘that tree’, licensing the deletion of the topic of each sentence. In the face of this fact, the assumed existence of an empty topic in the absence of identification of its chain-initial topic is far from plausible.

Furthermore, J. Huang’s stipulation of the finite-non-finite distinction (where he argues that there is a *pro* subject if the clause is finite, and a PRO subject if it is non-finite) is also against our intuitions. It has been generally agreed that there is no systematic way, either syntactically or morphologically, to distinguish finite clauses from non-finite clauses in Chinese. However, J. Huang (1982, 1984, 1989) claims that the distinction between finiteness and non-finiteness can be made with respect to the potential occurrence of the Aux category, which can be either overt such as an aspect marker or a modal, or non-overt such as zero aspect markers. This diagnostic, as argued by some researchers (e.g. Y. Huang 1991, 1992, 1994; Hu et al 2001), does not do the trick at all.

- (3.19) a. *Zhangsan bi/quan Lisi chi le yao.*
 Zhangsan force/persuade Lisi eat PFV medicine
 ‘Zhangsan forced/persuaded Lisi to take medicine.’
 b. *Zhangsan bi/quan Lisi xi guo du.*
 Zhangsan force/persuade Lisi take EXP drug
 ‘Zhangsan forced/persuaded Lisi to take drugs.’
 c. *Zhangsan bi/quan Lisi zhan zhe he jiu.*

Zhangsan force/persuade Lisi stand DUR drink wine
 ‘Zhangsan forced/persuaded Lisi to stand there drinking.’

Under a control verb like *bi* ‘force’ and *quan* ‘persuade’, according to J. Huang, an embedded clause may never take an element of AUX. However, contrary to his claim, all the examples in (3.19) are felicitous though the embedded verbs do take the three frequently used aspect markers. In defense of his claim, J. Huang (1989) argues that the aspect markers in sentences like the above are better construed with the matrix verb rather than with the embedded verb. The evidence provided by him is that when sentences like (3.20) are negated, the perfective marker *you* must precede the matrix verb while the original aspect markers cannot co-occur with the embedded verbs. This does not hold either. The following example is taken from J. Huang (1989: 190) where the occurrence of an aspect marker *guo* after the embedded verb *lai* does not affect the felicity of the sentence at all.

(3.20) *wo mei you bi ta e lai guo.*
 1SG not PFV force 3SG come EXP
 ‘I didn’t force him to come.’

Even in sentences like (3.19), when the matrix verb is negated the experiential aspect marker *guo* and the durative aspect marker *zhe* can frequently occur with the embedded verbs — once again, a contradiction to his generalisation.

(3.21) a. *Zhangsan mei (you) bi/quan Lisi xi guo du.*
 Zhangsan not PFV force/persuade Lisi take EXP drug
 ‘Zhangsan didn’t force/persuade Lisi to take drugs.’
 b. *Zhangsan mei (you) bi/quan Lisi zhan zhe he jiu.*
 Zhangsan not PFV force/persuade Lisi stand DUR drink wine
 ‘Zhangsan didn’t force/persuade Lisi to stand there drinking.’

Given the theoretical and empirical problems discussed, J.Huang's variable analysis has been shown to be untenable.

3.2.2 *The Pragmatic Analysis*

Being aware of the fact that syntax proper may benefit from transferring some of its explanatory burden to pragmatics, Y.Huang (1994) develops a pragmatic approach to anaphora within the neo-Gricean framework of conversational implicature and attempts to extend it to topic constructions in Chinese. In his pragmatic theory, 'anaphora is largely determined by the systematic interaction of two neo-Gricean pragmatic principles, namely the M[anner]- and I[nformativeness]-principles, constrained by a Disjoint Reference Presumption (DRP), information saliency and general consistency conditions on conversational implicature' (p.115); in terms of consistency constraints, any interpretation is subject to the requirement of consistency with the DRP and information saliency, so that 'implicatures to co-reference may be preferred according to the saliency of antecedent in line with the following hierarchy *topic > subject > object*, etc.'(p.145).

According to the pragmatic theory of anaphora he has constructed, Y.Huang postulates an antecedent search procedure for zero anaphors as follows (Y.Huang 1994: 149-150):

In a structure of the sort $[s_2[s_1\emptyset]]$, where \emptyset is a zero anaphor, \emptyset is interpreted as referentially dependent according to the following preference order:

- (i) \emptyset is referentially dependent on the local subject; failing which:
- (ii) \emptyset is referentially dependent on the local object; failing which:
- (iii) \emptyset is referentially dependent on both the local subject and the local object (split antecedents); failing which:
- (iv) (i)-(iii) is recursively applied to the next, higher clause until the antecedent is found; failing which:
- (v) find the nearest antecedent in the discourse, preferably a topic; failing

which:

- (vi) settle for an ‘arbitrary’ interpretation.

Even from a purely logical perspective, Y.Huang’s proposal apparently lacks consistency. Specifically, his postulation of an antecedent search procedure is not in agreement with his pragmatic theory of anaphora, a violation of the information saliency conditions. If we follow his pragmatic theory concerning the interpretation of anaphora, the preference order in the assignment of antecedent for a zero anaphor should be uncontroversially *topic* > *subject* > *object* rather than the order *subject* > *object* > *topic* determined by the above procedure, given that the former forms a hierarchical relation in terms of information saliency. As far as topic sentences are concerned, Y.Huang’s pragmatic analysis cannot apply to any of them with a zero anaphor, single or multiple.

- (3.22) *Zhangsan_i zhuren ma guo \emptyset_i .*

Zhangsan head scold EXP

‘Zhangsan, the head scolded (him).’

- (3.23) *Zhangsan_i Lisi zhidao zhuren ma guo \emptyset_i .*

Zhangsan Lisi know head scold EXP

‘Zhangsan, Lisi knows that the head scolded (him).’

- (3.24) *Zhangsan_i Lisi xiang zhidao shui ma guo \emptyset_i .*

Zhangsan Lisi want know who scold EXP

‘Zhangsan, Lisi wonders who scolded him.’

- (3.25) *naxie shu_i xuesheng du \emptyset_i guo hen qiguai.*

those book student read EXP very strange

Lit. ‘That those books students have read is strange.’

Lit.* ‘Those books, it is strange that students have read.’

- (3.26) *zhe-men ke_i Zhangsan_j wo jiao le $\emptyset_j \emptyset_i$.*

this-CL course Zhangsan 1SG teach PFV

Lit. ‘This course, Zhangsan I taught.’

(3.27) *Lisi_i wo gaosu le ϕ_i na-ge difang_j wo qu guo ϕ_j .*

Lisi 1SG tell PFV that-CL place 1SG go EXP

Lit. 'Lisi, I told (him) that that place I have been to.'

All the zero anaphors in the above topic sentences are referentially dependent on the topic rather than the local subject or object, or the subject or object of a higher clause, for the simple reason that the topic expression as the 'centre of attention' is the most salient of all constituents in the sentence (cf. C. Li & Thompson 1976).⁶

Of course the author may argue that by 'a structure of the sort [$s_2[s_1\phi]$]', he means a sentence without a topic-comment structure. Even so, predictably his postulation of the preference order in search for a zero anaphor's antecedent still lacks a solid theoretical foundation, given that the triple of syntax, semantics and pragmatics each plays a role in natural language understanding, to say nothing of the interpretation of anaphora, a puzzling linguistic phenomenon. For instance, when discussing the commonly assumed role played by semantics in the assignment of antecedent or controller (e.g. Radford 1981, Xu 1985, Culicover & Wilkins 1986, Sag & Pollard 1991), Y.Huang (1994: 152) argues that the lexical semantics of control verbs does not determine the choice of controller. He claims that the I-principles, together with the interpretation heuristic in his antecedent search procedure will predict the following pattern for control: *subject control* > *object control* > *split antecedency control* > *intrasentential control* > *remote control* > *arbitrary control*. This theory of controller assignment can be easily falsified by his own claim, that is, the unmarked interpretation of control verbs can be simply defeated in the face of inconsistency with context and/or world knowledge.

(3.29) a. *xuesheng_i daying ϕ_i hui jige.*

student promise will pass

⁶ In examining Y. Huang's hierarchy concerning the antecedent search procedure, I have an explanation for *topic* > *subject*, but not *subject* > *object*, since I am mainly concerned with topic constructions.

‘The student₁ promised that he₁ would pass the test.’

b. *laoshi₁ daying xuesheng₂ \emptyset_2 hui jige.*

teacher promise student will pass

‘The teacher₁ promised the student₂ that he₂ would pass the test.’

c. *laoshi₁ daying xuesheng₂ de fumu₃ \emptyset_2 hui jige.*

teacher promise student ‘s parents will pass

‘The teacher₁ promised the student₂’s parents₃ that he₂ would pass the test.’

Obviously, the controller of the zero anaphor in (3.29a-b) is determined by the lexical semantics of *daying* ‘promise’ that can be used to express either a commitment-to-action or a commitment-to-permission. Although in (3.29c) the controller of the zero anaphor is neither the subject *laoshi* ‘teacher’ nor the object *xuesheng de fumu* ‘student’s parents’ nor the split antecedent *laoshi* and *xuesheng de fumu*, yet the anaphoric reference, contrary to his control search pattern, does not resort to intrasentential control or remote control or arbitrary control. This naturally leads us to the conclusion that his pragmatic apparatus does not do the job.

Empirically, Y.Huang’s analysis of topic constructions is untenable as well. To prove his pragmatic apparatus regarding the interpretation of zero anaphors in topic constructions, Y.Huang claims that the topic-zero anaphor in examples like (3.30) would be I-implicated to be coindexed with the chain-initial topic *Lao Wang*, because it cannot in general be anteceded by an NP that is lower on the saliency hierarchy.

(Y.Huang 1994)

(3.30) *Lao Wang jixing huai, \emptyset piqi ye huai.*

Lao Wang memory poor temper also bad

‘Wang, memory is poor and temper is bad.’

The above claim can be easily falsified by sentences like (3.31)-(3.32) where the zero-anaphor topic is coreferential to the object NPs *zhongguo cai* ‘Chinese dishes’

and *da chengshi* 'big city' respectively.

(3.31) *Lao Wang xihuan Zhongguo cai, ø wei mei, ø se xiang.*

Lao Wang like Chinese dish taste good colour appetizing

'Wang likes Chinese food; it is good in taste and colour.'

(3.32) *Lao Wang taoyan da chengshi, ø ren duo, ø kongqi cha.*

Lao Wang dislike big city people many air bad

'Wang dislikes big cities: population is large and air quality is bad.'

To conclude, although his argument against the syntactic analysis like J.Huang's is very convincing and also it is true that pragmatics provides a set of complementary principles constraining the interpretation or production of an anaphoric expression, Y.Huang's pragmatic analysis of anaphora needs further refinements, at least with reference to topic constructions.

3.2.3 The Structural Analysis

In an effort to provide a precise definition for topic, Shi (2000) attempts to characterise topic constructions in Chinese from a purely structural perspective. The idea of Shi's structural analysis is that topic is always related to a position inside the comment and always depends on an element inside the comment for its thematic role, since it has no independent thematic role and hence no syntactic function of its own. Obviously, Shi's generalisation about the properties of topic constructions shows that he does not acknowledge the role of semantics nor pragmatics but syntax only, because according to him there is a structural dependence relationship between the topic and the comment clause, which determines the production and interpretation of topic constructions of whatever types, English style or Chinese style. Clearly, this appears to be a big claim implying that there is no necessity of distinguishing topic constructions in terms of English style and Chinese style.

In what follows, I shall show that Shi's structural characterisation of topic construction

is an overgeneralisation. Specifically, if Shi's structural analysis holds for English-style topic constructions, it cannot apply to Chinese-style topic constructions where semantics and pragmatics do play a significant role. Firstly, consider the following example, the best-known Chinese-style topic sentence first employed in Chao 1968 and then widely cited in the relevant work (e.g. C. Li & Thompson 1981, J.Huang 1982, Xu & Langendoen 1985, Y.Huang 1994).

- (3.33) *na-chang huo xingkui xiaofangdui lai-de-kuai.*
 that CL fire fortunately fire-brigade come-DE-fast
 'That fire, fortunately the fire-brigade came quickly.'

The acceptability of the above sentence as a topic structure, according to Shi (2000: 393), relies crucially on the occurrence of the connective adverb *xingkui* 'fortunately' which is usually a part of the pair *xingkui ... buran* 'otherwise' and hence allows two possible interpretations, as illustrated in (3.4a-b).

- (3.34) a. *na-chang huo xingkui xiaofangdui lai-de-kuai, buran jiu*
 that-CL fire fortunately fire-brigade come-DE-fast otherwise really
hui shao-si bu-shao ren.
 will burn-die not-few people
 'That fire, fortunately the fire-brigade came quickly, otherwise (it) would have killed many people.'
- b. *na-chang huo xingkui xiaofangdui lai-de-kuai, buran na-ci*
 that-CL fire fortunately fire-brigade come-de-fast otherwise that time
women dou hui shao-si.
 we all will burn-die
 'That fire, fortunately the fire-brigade came quickly, otherwise we would all have been burnt to death all that time.'

Shi argues that in (3.34a) the sentence-initial NP *na-chang huo* 'that fire' is related to

the subject position of a main clause, whereas in (3.34b) it functions as a temporal adverbial of a main clause, namely it is related to a position taken by the resumptive form *na-ci* ‘that time’ between the connective adverb and the subject in the main clause. If this connective adverb is deleted from the topic sentence, the initial NP *na-chang huo* ‘that fire’ in the resulting sentence would become the sentential adverbial, which implies that it is not a topic any more.

(Shi 2000)

(3.35) *na-chang huo xiaofangdui lai-de-kuai.*

that-CL fire fire-brigade come-DE-fast

‘At the time of that fire, the fire brigade came quickly.’

This argument does not hold up. In the first place, the topicality of sentences like (3.35) does not merely depend on the adverb but the semantic properties of the initial NP *na-chang huo* ‘that fire’ and the NP *xiaofangdui* ‘fire-brigade’ in the comment clause. Apparently, they are from the same semantic field, which crucially determines the acceptability of the sentence. If the NP *huo* is replaced by another NP like *hongshui* ‘flood’ that is not from the same semantic field as *xiaofangdui*, the outcome is hardly acceptable even if Shi’s construal of the initial NP as the sentential adverbial is maintained, for the simple reason that the resulting sentence is semantically pretty odd, i.e. given our world knowledge that the duty of the fire brigade is to extinguish fire, not water.

(3.36) *?*na-chang hongshui xingkuai xiaofangdui lai-de-kuai.*

that-CL flood fortunately fire-brigade come-DE-fast

‘At the time of that flood, fortunately the fire brigade came quickly.’

Secondly, even if the initial NP *nei-chang huo* can be construed as the adverbial of the sentence, it can still be treated as the topic, which follows the fact that in Chinese both argument and non-argument can be topicalised (see Xu & Langendoen 1985). Actually

there are a considerable number of similar sentences where the initial NP introduces the topic about which the comment clause says something relevant.

(3.37) *na-chang bisai quan cheng dou feng le.*

that-CL match whole city all crazy SFP

‘As for that match, the whole city was crazy.’

(3.38) *zhe-ci zhanyi henduo pingming dou si le.*

this-CL battle many civilians all die PFV

‘As for this battle, many civilians were killed.’

The well-formedness of the above sentences characteristic of Chinese style lies in that the relation between the topic and the comment satisfies the aboutness requirement which is a necessary and sufficient condition (see Chafe 1976, C. Li & Thompson 1981, Xu & Langendoen 1985, J. Huang 1987, Gundel 1988, Y. Huang 1994). However, Shi attempts to explain away this universally acknowledged notion by claiming that syntactically it is not clearly defined. His criticism of aboutness is unjustified because, the term ‘aboutness’ appears to be fundamentally a semantic or pragmatic concept, rather than a syntactic concept. Consider the counterexample provided by Shi (2000: 389).

(3.39) **zhe-jian da shi wo zhidao Zhang Xiaozhang cizhi le.*

this-CL big issue 1SG know Zhang Principal resign PFV

(3.40) *zhe-jian da shi jiu shi Zhang Xiaozhang cizhi le.*

this-CL big issue exactly be Zhang Principal resign PFV

‘The big issue is that Principal Zhang has resigned.’

Shi first explains that the comment in (3.39) has an embedded clause that spells out the content of the topic *zhe-jian da shi* ‘this big issue’ and the relation between the topic and comment can be represented by the equational sentence (3.40), and then argues that the comment’s saying a lot about the topic does not help to stop the sentence from

being acceptable. This argument is easily refutable because, the ‘infelicity’ of (3.39) is due to its violation of the topic-familiarity condition (see Prince 1980, Gundel 1988). In terms of the aboutness constraint, there is a correlation between topic-comment and given-new. In the case of (3.39), the use of the demonstrative *zhe* ‘this’ clearly indicates that its content or referent is already given, namely there is a familiarity shared by both the addresser and the addressee. Here pragmatics certainly plays an important role. Given that the topic is a given term, the comment is expected to be something new, rather than something that just unduly ‘repeats’ the content of the event already known to the addressee. As it is generally agreed among linguists including Shi (2000) himself, that the topic construction is a syntactic device used to perform certain discourse functions, a naturally-occurring discourse context like (3.41) can demonstrate why topichood is improperly employed in Shi’s example.

(3.41) A: *Zhang Xiaozhang cizhi le.*

Zhang Principal resign PFV

B: *zhe-jian da shi wo zhidao (*Zhang Xiaozhang cizhi le).*

this-CL big issue 1SG know Zhang Principal resign PFV

To save sentences like (3.39), one has to delete the embedded clause as in (3.41B). Of course, I do not intend to make a strong claim here that the referent of an expression or the content of an event can never be copied in the comment of a topic construction. It can, but the comment containing it must provide some new information, as illustrated in (3.42) where B would be unacceptable without *you* ‘again’ which signals that beating the policeman is not Zhangsan’s first offence.

(3.42) A: *Zhangsan da le jingcha.*

Zhangsan beat PFV police

B: *zhe jiahuo, ta *(you) da le jingcha.*

this guy 3SG again beat PFV police

In the face of the fact that the triple of syntax, semantics and pragmatics each plays a role in the formation and interpretation of topic constructions, Shi's characterisation of topic constructions from a structural perspective has been shown to be overgeneralised with regard to the Chinese-style topic structure.

3.3 Preliminary analysis

One important question to be raised at the outset of a study on the leftmost expressions in a left-dislocation structure is, do they semantically have the same properties, though structurally they all display left-periphery effects? This question seems problematic to answer, because Chinese appears to be a language that displays considerable freedom with respect to the articulation of information structure. Like Japanese which has a grammaticalised particle *wa* explicitly marking a particular expression as a topic element, Chinese has a number of particles that exercise the same function, as mentioned in footnote 1. Apart from this, the topicalised expression can be characteristically set off from the rest of the clause simply by a pause tone, or an intonational break, an expression widely employed in the linguistic literature, or in the words of Rizzi (1997), a 'comma intonation'.⁷

Furthermore, Chinese, like English which can assign a fronted expression focal stress to indicate that it is the new information, in contrast with the open clause expressing contextually given information, can also endow an element with focus properties in the similar fashion. But this is still not the whole story. It appears, as will be discussed later, that Chinese can also endow a certain expression with focus effects without giving any morphological or phonological cues. This general description, for which exemplification will be provided later, renders the left-periphery of Chinese sentences containing a dislocated constituent, which are generally considered as topic sentences,

⁷ It should be noted that although the particles mentioned in footnote 1 are not obligatorily used by Chinese native speakers, namely they have not been fully grammaticalised as has the Japanese topic marker *wa*, they have been observed to be undergoing a process of grammaticalisation (see Fang 1994). Also, it should be pointed out that generally these particles do not figure prominently in Chinese grammar except that they have some discourse or communicative functions, as roughly discussed in this chapter.

to be a fascinating goal of inquiry.

In this section, therefore, I shall explore the nature of the left-peripheral expressions from both the viewpoint of interpretation and that of description, with a view of providing an effective way of identifying a certain constituent occurring at the left periphery of sentences either as a purely topicalised element, a purely focalised element or an element endowed with hybrid properties of both topic and focus, from which a precise characterisation of Chinese topic constructions within the DS framework will eventually be developed. Although a formal definition of the two informal notions ‘topic’ and ‘focus’ will be given as a result of the dynamic analysis developed in section 3.4, yet to provide an initial analysis of the grammatical structure in question, I tentatively stick to the general definition of topic and focus widely employed in the literature, that is, topic is what the sentence is about and usually provides the given information, and focus is the centre of attention and usually provides the new information as opposed to the given information expressed by the rest of the sentence.

Given that the topicality of left-peripheral expressions in topic constructions characteristic of Chinese style is uncontroversially clear, namely, they are unquestionably expressions with a purely topic effect, as can be evidenced by the fact that these (main) topicalised expressions are usually salient in the discourse context, I shall ignore Chinese-style topic constructions, but instead focus on the English-style topic constructions.

3.3.1 Single topic structure

Before we find a methodology to determine whether a left-peripheral constituent in a left-dislocation structure is a topic or a focus, we should make a distinction between these two terms which are notoriously variable within the linguistic literature, formalist or functionalist. Within approaches attempting to tackle these two kinds of phenomenon by locating their properties with the grammar, one may find that they are

regarded as standardly primitive terms of the grammar (Rizzi 1997) or as distinct layers of information structure (Vallduví 1992). Compared with ‘topic’ which appears to be unproblematic to identify thanks to both its marked nature and syntactic prominence, ‘focus’ seems to be problematic, due to the uncertainty of its syntactic position, which is why it is sometimes defined in semantic or pragmatic terms (Kadmon 2001).

It is not my intention here to make an in-depth exploration of such problematic phenomena, instead I am going to provide a rough generalisation about their behaviour within Chinese left-dislocation structure from an interpretive perspective. Consider (3.1), repeated here as (3.43), where the dislocated expression in (a) is marked, morphologically by a pause particle or phonologically by a pause tone, while the sentence-initial expression in (b) is unmarked, though optionally it could be phonologically stressed.

(3.43) a. *Zhangsan (a), zhuren ma guo (ta).*

Zhangsan head scold EXP 3SG

‘As for Zhangsan, the head scolded (him).’

b. *Zhangsan zhuren ma guo.*

Zhangsan head scold EXP

‘Zhangsan the head scolded.’

Intuitively, there seems to exist a significant difference in reading between the left-peripheral expression *Zhangsan* in (3.43a) and its twin counterpart in (3.43b), namely the former has a topic reading while the latter has a focus reading. One effective way to determine whether a constituent has topic or focus effects, is to place the relevant sentence under discourse circumstances. For (3.43a) to hold, one naturally occurring context would be like (3.44a-b), but not (3.44c).⁸

⁸ A variety of answers as those in (3.44) is a reflection of the pro-drop nature of Chinese, as mentioned in Chapter 1.

(3.44) a. A: *zhuren ma guo Zhangsan ma?*

head scold EXP Zhangsan Q

'Did the head scold Zhangsan?'

B: *Zhangsan (a), zhuren ma guo (ta).*

Zhangsan head scold EXP 3SG

B: *zhuren ma guo.*

head scold EXP

B: *ma guo.*

scold EXP

b. A: *zhuren dui Zhangsan zuo guo shenme?*

head to Zhangsan do EXP what

'What did the head do to Zhangsan?'

B: *Zhangsan (a), zhuren ma guo (ta).*

Zhangsan head scold EXP 3SG

B: *zhuren ma guo (ta).*

head scold EXP 3SG

B: *ma guo.*

scold EXP

c. A: *zhuren zuo guo shenme?*

head do EXP what

'What did the head do?'

B: **Zhangsan, zhuren ma guo.*

Zhangsan head scold EXP

Clearly, the left-peripheral expression *Zhangsan* in (3.43a) requires that the same expression should be available or salient in the previous context, as exhibited both in the general question of (3.44a) and in the *wh*-question of (3.44b), for the simple reason that the morphological or phonological marker indicates that it is a given term, or it is identifiably a marked topic, from which a proposition can be constructed.

Similarly, we can use the same methodology to determine whether the left-dislocated expression *Zhangsan* in (3.43b) receives a topic or a focus interpretation. For (3.43b) to hold, a naturally occurring context should be something like (3.45).

(3.45) a. A: *zhuren ma guo zhexie ren ma?*

head scold EXP these people Q

‘Did the head scold these guys?’

b. A: *zhexie ren zhuren ma guo ma?*

these people head scold EXP Q?

‘Did the head scold these guys?’

B: *Zhangsan zhuren ma guo, Lisi zhuren mei ma guo.*

Zhangsan head scold EXP Lisi head not scold EXP

Unlike the left-peripheral expression in (3.43a) which is marked and hence has a topic reading, the one in (3.43b) is not so marked and hence receives a focus reading, exactly a contrastive focus, as illustrated in (3.45). But intuitively this is only one side of the story. Different from those focused elements which appear in other syntactic positions, for instance, the object position as in a canonical sentence and the post-copular position as in a pseudocleft sentence, the focused expression *Zhangsan* in (3.43b) also has some properties of a topic, probably because it is placed in the marked position, albeit unmarked morphologically or phonologically. The evidence for its topic effect is that if the two questions in (3.45) are changed to a *wh*-question in which the *wh*-word certainly has a focus effect, it would be hardly acceptable for *Zhangsan* to appear in the topic position of the responding sentence.

(3.46) a. A: *zhuren ma guo shui (FOC)?*

head scold EXP who

‘Who did the head scold?’

B: ?**Zhangsan zhuren ma guo.*

Zhangsan head scold EXP

C: *zhuren ma guo Zhangsan (FOC).*

head scold EXP Zhangsan

A careful comparison of (3.45) with (3.46) reveals how the trick has worked: the expression *zhexie ren* ‘these guys’ in the previous context, namely in both (3.45a) and (3.45b), functions as at least half a topic, of which the left-dislocated expression *Zhangsan* is supposedly an element, for the responding sentences. Seen in this light, the leftmost expression *Zhangsan* actually has a hybrid nature, that is, it is endowed with both focal and topical properties, another piece of evidence for which is that this dislocated constituent can serve as topic for the following discourse like (3.47), where the pronoun *ta* ‘he’ must be interpreted as co-indexed with *Zhangsan* in the topic position of the first clause.

(3.47) A: *zhuren ma guo zhexie ren ma?! zhexie ren zhuren ma guo ma?*

head scold EXP these people Q these people head scold EXP Q
‘Did the head scold these guys?’

B: *Zhangsan zhuren ma guo, ta xuwei you landuo;*

Zhangsan head scold EXP 3SG hypocritical and lazy

‘Zhangsan the head scolded; he is not only hypocritical but also lazy;’

Lisi zhuren mei ma guo, ta chengshi you qinfen.

Lisi head not scold EXP 3SG honest and diligent

‘Lisi the head didn’t; he is not only honest but also diligent.’

In the face of these facts, it is absolutely necessary to define the dislocated elements like *Zhangsan* in (3.1b) in its right perspective. To some extent, expressions of this sort, though interpretively giving rise to a focus effect due to its unmarked nature and its uncertain status, should probably not be analysed as a single informational significance at all. Given the fact that the focus interpretation of an expression is not

typically constrained in the sentence-initial position⁹, and the fact that its topical property can be highlighted by an expanded context, I call it topicalised focus instead of focalised topic, which should be justified, given that from a processing perspective its focality usually weighs over its topicality.¹⁰

Naturally, the discussion thus far leads us to a conclusion that from a purely descriptive perspective, a topic has a single reading while a topicalised focus has a hybrid reading, namely its topicality and focality is likely to be on the equal footing in context; from a purely interpretive perspective, a topic has a presupposed nature while a topicalised focus has a non-presupposed nature (cf. É.Kiss 2002), namely its effect emerges dynamically, albeit syntactically associated with a marked position.

3.3.2 Multiple topic structure

Let us now turn to multiple topic constructions and see if distinct topics in a single sentence structure have the same function. As a matter of fact, the term ‘multiple topic’

⁹ As shown in (3.46), some constituents like the object NP in a canonical sentence can receive a focus interpretation, and this sort of focus is usually considered as the natural focus, as will be explained in footnote 9. Also as will be discussed in detail in Chapter 6, Chinese has a syntactic focusing construction, where the focus is encoded in a purely syntactic fashion.

- (i) *zhuren ma guo de shi Zhangsan.*
head scold EXP DE is Zhangsan
‘Who the head scolded is Zhangsan.’
- (ii) *ma guo Zhangsan de shi zhuren.*
scold EXP Zhangsan DE is head
‘Who scolded Zhangsan is the head.’

¹⁰ It is worth mentioning that my definition of the focus element with a topical effect as topicalised focus is in spirit similar to the notion of *huati jiaodian* ‘topical focus’ coined by Liu & Xu (1998). In a related research on ‘focus’ and ‘topic’ in Chinese, Liu & Xu reasonably classify ‘focus’ into three types in terms of the properties [±prominent] and [±contrastive], namely Natural Focus, Contrastive Focus and Topical Focus, the first of which takes as background other constituents within the same clause and hence has the property [+prominent] and [-contrastive], the second of which takes as background the rest of the same clause and also one element of the other clause or other clauses, and hence has the property [+prominent] and [+contrastive], and finally the third of which only takes as background one element of other clauses. Furthermore, Natural Focus usually bears a pitch accent. Same as Natural Focus, Contrastive Focus usually bears a contrastive stress. As for Topical Focus, Liu & Xu argue that it displays not only topicality but also focality, and also clauses containing it form a contrast with one another, not only in terms of topical focus but also in terms of the comment—correctly I think. But they claim that in a clause with a topical focus, the informational focus is on the comment instead of the topical focus,—wrongly I think. As demonstrated by the answer in (3.47), both the two topicalised focuses *Zhangsan*, *Lisi* and the comment *zhuren ma guo* ‘the head scolded’, *zhuren mei ma guo* ‘the head didn’t scold’, appear to be on the equal footing at the information level.

might be misleading because in practice, speakers may have trouble accepting a sentence with three or more topics, as pointed out in section 3.1, although in theory, the quantity of topics could be more than three. Therefore, I shall limit the description and discussion of the so-called multiple topic constructions to sentences with two topics, as exemplified in (3.5)-(3.6), the (a) examples of which are repeated here as (3.48)-(3.49) respectively.

(3.48) *zhe-men ke (ya), Zhangsan wo jiao le.*

this-CL course PAR Zhangsan 1SG teach PFV

Lit. 'This course, Zhangsan I taught.'

(3.49) *Lisi (a), wo gaosu le (ta) na-ge difang wo qu guo.*

Lisi PAR 1SG tell PFV 3SG that-CL place 3SG go EXP

Lit. 'Lisi, I told (him) that that place I have been to.'

The order of topics in a multiple topic construction, as also pointed out in section 3.1, is determined by the degree of prominence. Intuitively, the leftmost expression as the first topic sets the domain within which a proposition holds. More specifically, it serves as the point of departure from which new information can be expressed. The givenness nature of the first topic can also be proved under discourse circumstances, too. Sentences like (3.48), for instance, could be contextualised in a discourse context like (3.50), showing that the first topic expression should be lexically salient in the previous context.

(3.50) *ni jiao le naxie xuesheng zhe-men ke ma?*

2SG teach PFV those student this-CL course Q

'Did you teach this course to students?'

Clearly, the first topic as old information provides the context for building a proposition which expresses new information. Having had a clear picture of the first topic's function, we are then left with another question, has the second topic the same

topical effect? Interpretively, the second one is distinct from the first one, because dynamically it has a different effect, as can be confirmed by the comparison of (3.51a), a canonical answer to the question (3.50), with (3.51b), an unexpected answer, yet of felicity to the question (3.50).

(3.51) a. (*zhe-men ke ya*), *wo jiao le (xuesheng)*.

this-CL course PAR 1SG teach PFV student

b. *zhe-men ke (ya), Zhangsan wo jiao le, [Lisi wo mei jiao]*.

this-CL course PAR Zhangsan 1SG teach PFV Lisi 1SG not teach

Apparently, the comment-initial expression *Zhangsan*, the occurrence of which might be unexpected by the hearer, has a focus effect that emerges dynamically, exactly a contrastive focus that can bear a contrastive stress (cf. Yuan 1996). Also intuitively, the focused expression *Zhangsan* has not merely informational significance but also structural significance in virtue of its marked position, namely the TOP position of the comment clause. So possibly, this focused expression, like the left-peripheral expression in single topic constructions as in (3.43b), can also have a topic interpretation in certain discourse context.

(3.52) *zhe-men ke (ya), Zhangsan_i wo jiao le, ta_i hen xihuan, [ø_i shuo ø_i*

this-CL course PAR Zhangsan 1SG teach PFV 3SG very like say

hai xiang ting].

still want listen

Lit. 'As for this course, Zhangsan I taught; he liked it very much; he said he would like to take it again.'

Unquestionably, there is justification for distinguishing the second topic from other focused expressions which often occur freely either in the preverbal position or in the postverbal position. Just like the left-dislocated expressions in single topic constructions, the second topic also has the hybrid properties of both topic and focus,

and thus we can reasonably analyse it as a topicalised focus, given that from a processing point of view its focality usually weighs over its topicality.

The distinction between the two dislocated constituents in terms of topic and focus is easily identifiable in the multiple topic constructions consisting of a main clause and a subordinate clause. Consider (3.6a), repeated here as (3.53).

(3.53) *Lisi (a), wo gaosu le (ta) na-ge difang wo qu guo.*

Lisi PAR 1SG tell PFV 3SG that-CL place 1SG go EXP

Lit. 'As for Lisi, I told (him) that that place I have been to.'

The leftmost expression *Lisi* in the TOP position of the main clause, like those expressions with a purely topical property, is generally marked either by a pause particle or a pause tone, which indicates that it is a given term from which a proposition can be established. Contrastively, the dislocated expression *na-ge difang* 'that place' in the TOP position of the subordinate clause, like those expressions with a focal property, is unmarked morphologically, and usually receives a hybrid reading, that is, syntactically it is a topic associated with a marked position while interpretively it also has a focus effect. Similarly, the hybrid nature of the second topic can be illustrated in an expanded context as in (3.54), where the (a) sentence highlights its topical property and the (b) sentence its focal property.

(3.54) a. *Lisi (a), wo gaosu le (ta) na-ge difang_i wo qu guo, ϕ_i hen hao wan.*

Lisi PAR 1SG tell PFV 3SG that-CL place 1SG go EXP very good fun

Lit. 'As for Lisi, I told (him) that that place I have been to; it is great fun.'

b. *Lisi (a), wo gaosu le (ta) na-ge difang wo qu guo, zhe-ge difang*

Lisi PAR 1SG tell PFV 3SG that-CL place 1SG go EXP this-CL place

wo mei qu guo.

1SG not go EXP

Lit. 'As for Lisi, I told (him) that that place I have been to; this place I haven't

been to.'

In view of the above observations and discussions, we can draw a conclusion that the left-dislocated expressions in multiple topic constructions have different interpretations in that the leftmost constituent or the first topic is usually a given term which invariably has a topic effect, whereas the second topic is a new term which interpretively has a focus effect. In the next section, I shall integrate the facts observed and discussed so far into the dynamic account of topic constructions and shall demonstrate that the variation in interpretation of left-peripheral expressions can be successfully characterised from a left-right dynamics of language processing.

3.4 Dynamic account

In this section I approach Chinese topic constructions from a dynamic perspective and I shall demonstrate how a plausible account of the topic construction in Chinese is couched in the dynamic perspective and how the triple of syntax, semantics and pragmatics each plays a role in the interpretative process of this key grammatical construction. Contrary to the three previous analyses reviewed in section 3.2, I argue that

- (a) Different from the variable analysis proposed by J.Huang (1982, 1984, 1987, 1989), the gap in the comment clause cannot be construed as a variable, but as a pronominal of a sort to be defined.
- (b) Different from the pragmatic analysis proposed by Y.Huang (1991, 1994, 1995, 2000), the search for the zero anaphor in topic constructions always follows the preference order topic > subject > object, rather than subject > object > topic, because topic is the most salient term.
- (c) Different from the structural analysis proposed by Shi (2000), topic is not always syntactically related to an element inside the comment for its thematic role, but sometimes semantically or pragmatically associated with an element inside the comment or the comment as a whole.

To validate my argument, I assume that topic constructions, whether English style or Chinese style, generally respect the aboutness condition and the relation between the topic and comment can be encoded either syntactically, semantically and/or pragmatically. Interpretively, the leftmost constituent in the TOP position either provides a given term with respect to which some propositional structure is constructed, if it has purely topical properties; or it provides an update term to a given propositional structure if it bears focal properties as well as topical properties.

Technically, (i) the marked constituent in the topic position is characterised in the way it is interpreted as a linked structure of type e to the top node of an unfolding propositional structure, whereas (ii) the unmarked constituent is construed as an unfixed node dominated by the top node of a tree: the unfixed node is required to be fixed within the structure under construction. The analysis outlined in (i) applies to topic constructions where the topicalised element is marked either morphologically, usually by a pause particle, or phonologically, usually by a pause tone, whereas the analysis outlined in (ii) applies to topic constructions where the topicalised focus is usually unmarked and simply left-dislocated at the left periphery of a clause, though optionally it can take an emphatic stress.

Additionally, the analysis in terms of LINK relation applies to Chinese-style topic constructions as well, where the topic setting the domain or frame projects a tree of type e which is linked to the top node of the main propositional tree of type t but imposes no requirement for the copy of its formula.

3.4.1 English-style topic construction

Let us start by looking at English-style topic constructions where, as has been shown in section 3.1, an initial expression has a relative position in the comment clause, which is occupied by either a gap or a pronoun. Gapped topic constructions containing either a purely topicalised element or a topicalised focus, together with gapless topic

constructions comprising a resumptive pronoun or a full noun phrase, indicate that there is uncertainty with respect to the status of the left-peripheral NP: sometimes it behaves as though it is external to a sentence, and sometimes internal to a sentence, namely a regular member of a single sentence.

From the perspective of DS, the uncertainty displayed by the left-peripheral expressions naturally suggests two strategies: the characterisation of topic sentences can be made either in terms of LINK Adjunction or in terms of *Adjunction. Specifically, there are two analyses available for the left-dislocated NP, one in terms of a pair of linked structures with the initial constituent projecting a tree with the top node decorated with type *e* and imposing a formula requirement on the top node of the second tree, thus establishing a LINK relation; the other in terms of a single structure with the initial NP projecting an unfixed node that will eventually merge with an open node on the tree projected by the rest of the structure.

3.4.1.1 *single topic construction*

Gapped topic construction

Let us first of all deal with the gapped topic construction with a single expression dislocated at the left periphery of the sentence which as discussed in the preceding section, can be interpreted either as a given term endowed with merely topical properties or an update term endowed with both topical and focal properties. Consider (3.1a), repeated here as (3.55) in which the initial expression *Zhangsan* in the TOP position can be construed as providing a context where it is marked by a pause particle *a* or a pause tone and hence indicated by a comma, as in (3.55a), or as in (3.55b) where it does not take a morphological marker nor displays an intonational break, though it may optionally take an emphatic stress.

(3.55) a. *Zhangsan (a), zhuren ma guo.*

Zhangsan PAR head scold EXP

‘As for Zhangsan, the head scolded (him).’

b. *Zhangsan zhuren ma guo.*

Zhangsan head scold EXP

‘Zhangsan the head scolded.’

The marked nature of the leftmost constituent in sentences like (3.55a) indicates, as discussed in section 3.3, that this initial expression, as the given information, is an external member of the sentence, as can be evidenced by its availability and saliency in the previous context. In the face of this fact, we can employ the concept of a LINK relation introduced in Chapter 2 for relative clause construals and define a process of LINK Adjunction between an initial tree with its top node decorated with type *e* and some subsequent tree with its top node decorated with type *t*, duly imposing a requirement on the second that it contain an occurrence of the formula value annotating the top node of the first.¹¹

(3.56) LINK-COPY TRANSITION (*English style*)

$$\frac{\{Tn(n), Ty(e), Fo(\alpha) \diamond\}}{\{\{Tn(n), Ty(e), Fo(\alpha) \dots\} \{ \langle L^{-1} \rangle Tn(n), ?Ty(t), ?\langle D \rangle Fo(\alpha), \diamond \} \}}$$

Let us take (3.55a) as an example to show the sequence of actions step by step. The first step is the scanning of lexical input from the left-peripheral NP *Zhangsan*, the lexical information of which gives a reading of *Ty(e)* and the pause particle or

¹¹ With respect to my thesis, I defined the process of LINK Adjunction as starting from an initial tree with its top node decorated with *?Ty(e)* and then introducing a LINKed *?Ty(t)* node. In other words, I assumed an initial requirement *Tn(a), ?Ty(e)* which I presume would be additional to Axiom. In Cann et al (in press) the Topic Structure Introduction Rule (pp. 145-146) defines the process as starting from the Axiom *Tn(0), ?Ty(t)* and then introducing a LINKed tree with its top node decorated with *?Ty(e)*. This appears to be a better analysis of topic constructions, since it also allows us to characterise apposition constructions as shown in (i)-(ii), where a single term can be created from a LINKed term.

- (i) *J. K. Luoling, na-wei damingdingding de zuojia, yao lai women xueyuan xuexi.*
 J. K. Rowling that-CL big-name ‘s writer will come IPL college study
 ‘J. K. Rowling, the famous writer, is going to study at our college.’
- (ii) *Lisi, wo de yi-ge pengyou, yi-wei kaoguxuejia, faxiang le yi-zuo chengbao.*
 Lisi 1SG ‘s one-CL friend one-CL archaeologist find PFV one-CL castle
 ‘Lisi, a friend of mine, an archaeologist, found a castle.’

intonational break indicates this initial expression to be an external member of the sentence, hence forcing an analysis of a LINK relation between the first tree with the top node annotated with a formula $Fo(Zhangsan)$ of type e and the second tree of type t which requires a copy of formula $Fo(Zhangsan)$ from the first tree, as shown in figure 3.1 below.

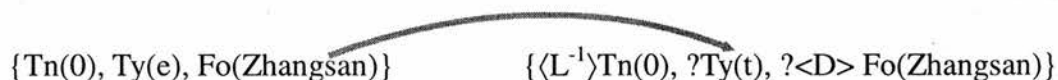


Figure 3.1: Parsing *Zhangsan* and introducing linked structures

After the transition from the initial tree of type e to the top node of the propositional tree, the primary structure can be unfolded by means of applying the general construction rules Introduction and Prediction. The second step, then, is to create the subject and predicate nodes the first of which is decorated with the formulae $Ty(e)$, $Fo(Zhuren)$, subsequent to the successful parse of the subject NP:

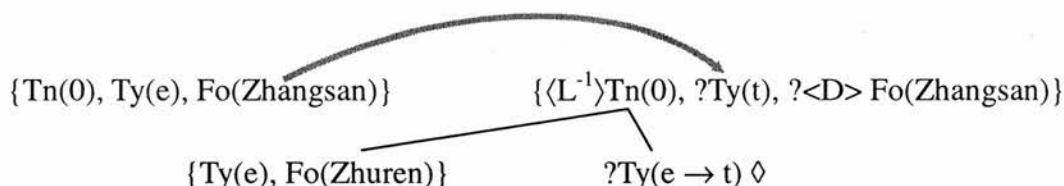


Figure 3.2: Parsing the string *Zhangsan (a), zhuren*

The next step is the processing of the transitive verb *ma* 'scold' that projects an unfixed predicate node, since verbs in Chinese are mostly underspecified with respect to type as discussed in Chapter 2.¹² The verb having been parsed, the pointer moves back to

¹² The treatment of action verbs such as *ma* 'scold' and *da* 'beat' as being underspecified and hence projecting an unfixed predicate node is justified in that sometimes they can take an adjunct phrase or an optional argument, as shown below.

- (i) *Zhangsan, zhuren ma guo (ta) ji ci.*
Zhangsan head scold EXP 3SG several time
'As for Zhangsan, the head scolded him several times.'
- (ii) *Lisi, zhuren da le (ta) yi dun.*
Lisi head beat PFV 3SG one time
'As for Lisi, the head beat him once.'

the open functor node which expands to have its own daughter nodes, one argument daughter and one two-place predicate daughter, again through Introduction and Prediction. The pointer then moves to the open type e node, indicating that this is next to be developed. The partial tree in figure 3.3 represents the parse state where both the subject and the verb have been parsed.

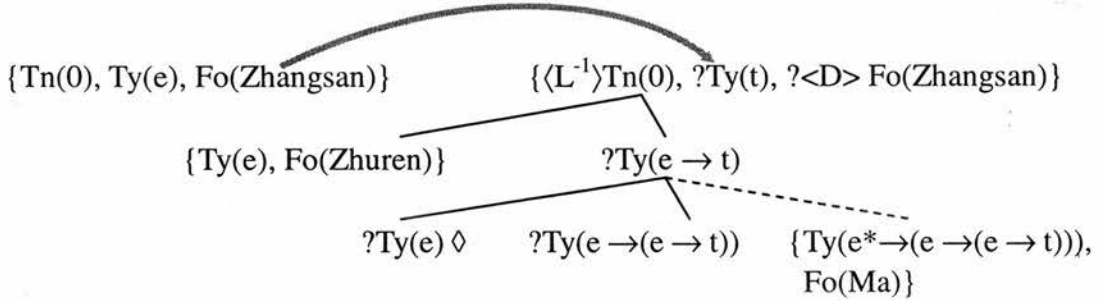


Figure 3.3: Parsing the utterance *Zhangsan(a), zhuren ma guo*

Notice that we are now facing a problem with the decoration of this empty node, since there is no lexical input after the verb is processed. Given the anaphoric relation between the pair of linked structures involving the requirement of a copy of formula, we would expect a pronoun to appear in the postverbal position that is obligatorily co-indexed with the left-dislocated expression *Zhangsan*. Here a question naturally arises, how to account for the non-occurrence of a pronoun in this type of topic structure?

Recall that Chinese, as described in Chapter 1, is a radical pro-drop language. The empty object node can therefore be treated as a place-holder that is able to provide the copy of the *Fo* value projected by the left-peripheral expression *Zhangsan*. This can be evidenced by the fact that a pronominal can optionally occur in the postverbal position, as introduced in section 3.1. Thus we can employ the null lexical rule formulated in Chapter 2, repeated here as (3.57).

The tense information is ignored here and also in other parts just for the convenience of discussion.

(3.57) the lexical entry for zero anaphor

```

IF      (?Ty(e)  $\wedge$   $\langle \uparrow \rangle T$ )
THEN   IF       $\langle \downarrow \rangle T$ 
      THEN   ABORT
      ELSE   put(Ty(e), Fo(U),  $\exists x.Fo(x)$ ,  $\langle \downarrow \rangle \perp$ )

```

The U is, as introduced in Chapter 2, a metavariable whose value can be instantiated through the pragmatic process of substitution which is effected by the modal form of requirement on the LINKed structure imposed by the topicalised element, hence $U = Fo(Zhangsan)$. This pragmatic effect can be accounted for by the fact that an anaphor has its value established in context. In the case of (3.55a), the topic expression *Zhangsan* sets up a context in which the comment string is interpretable, so the zero anaphor can only pick up this given term for its value.

Subsequent to the building of the argument daughter node, the pointer moves to the open two-place predicate node with which the unfixed predicate node merges, satisfying requirements on both nodes. The process of substitution and merge can be displayed in figure 3.4 below.

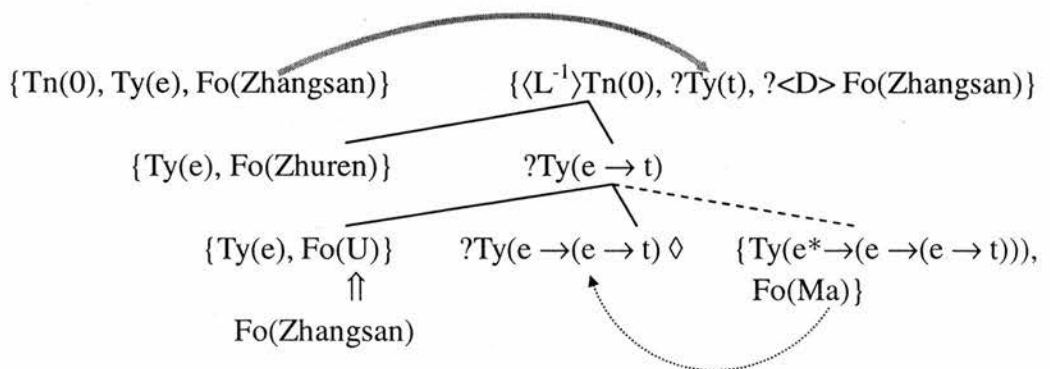


Figure 3.4: Substitution and merge

Having characterised topic constructions with a marked topic, let us now turn to those with an unmarked topic, precisely a topicalised focus. By contrast, the unmarked nature

of the initial expression in (3.55b) *Zhangsan zhuren ma guo*, which contrasts with the presupposed status of the remaining material, presents it as the locus of information that dynamically updates the given propositional structure. This naturally leads us to characterise this type of topic structure in the following fashion: (i) the topicalised focus as the left-peripheral expression invariably projects an unfixed node with a locational requirement; (ii) the unfixed node is linked to the top node of a tree that is duly decorated with a requirement $?Ty(t)$; (iii) the unfixed node will eventually merge within a single tree to yield a complete propositional formula.

To represent sentence (3.55b), a topicalised focus structure, the first step is to create a decorated tree, the root node of which is annotated with a formula of type t , as is universal in all parse representations. What follows is introduce the unfixed node with a locational requirement $?x. Tn(x)$, indicating that the node lacks a specified treenode address, as illustrated in figure 3.5.

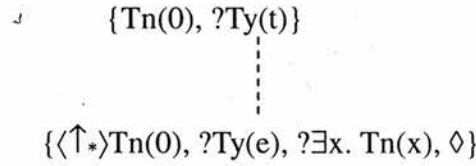


Figure 3.5: Introducing the unfixed node

The second step is the parse of the dislocated expression *Zhangsan*, the processing of which updates the decoration of the unfixed node with a formula value $Fo(Zhangsan)$, since it fulfils the requirement for an expression of type e :

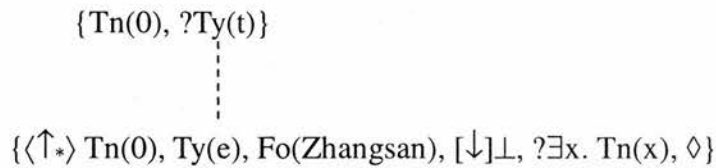


Figure 3.6: Parsing the dislocated NP *Zhangsan*

Having parsed *Zhangsan*, the pointer now moves back to the root node of the tree,

which allows parsing to proceed through Introduction and Prediction in the normal way. Subject and predicate nodes are thus developed and parsed exactly as in a normal sentence structure, as shown in figure 3.7, where the subject node is annotated with a formula $Fo(Zhuren)$ as a result of parsing the subject NP and the predicate node is expanded after the processing of the verb *ma* which projects an unfixed predicate node.

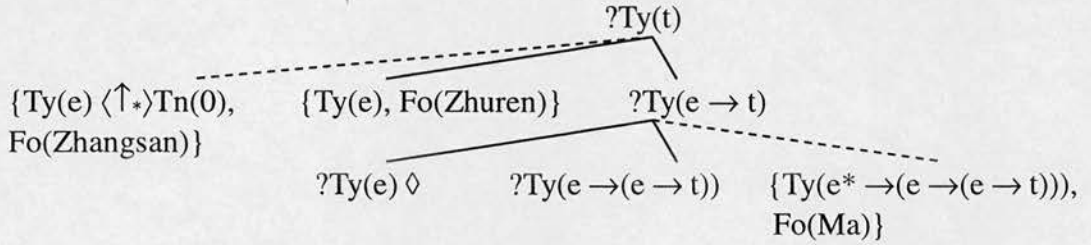


Figure 3.7: Parsing the utterance *Zhangsan zhuren ma guo*

Following convention, the pointer moves to the open argument node, as shown in the above tree. All words in the string have been processed at this point, and there remain outstanding two unfixed nodes, one with a requirement to construct a node of $Ty(e)$ and the other with a requirement to construct a node of $Ty(e \rightarrow (e \rightarrow t))$. Naturally, the unfixed node projected by the displaced NP *Zhangsan* merges with the pointed argument node. After merge takes place, the pointer will move to the open two-place predicate node, which induces another merge, the unfixed predicate node projected by the verb *ma* with the two-place predicate node, as in figure 3.8. Ultimately, completion of the tree will give rise to a well-formed propositional formula, $Ma(Zhangsan)(Zhuren)$.

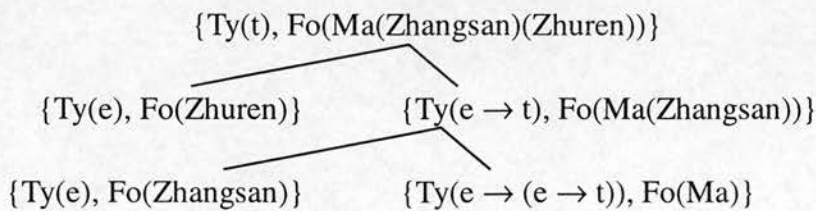


Figure 3.8: Completing the parse

In what follows, let us see if the two strategies, the LINK relation and the unfixed node strategy, can provide a satisfactory account of other types of topic sentences. First consider (3.2a), repeated here as (3.58a), which appears to display the so-called long-distance dependency effects, since the distance between the dislocated expression and the gap paired could be arbitrarily long, as exhibited in (3.58b).

(3.58) a. *Zhangsan Lisi zhidao zhuren ma guo.*

Zhangsan Lisi know head scold EXP

‘Zhangsan, Lisi knows that the head scolded (him).’

b. *Zhangsan Lisi zhidao ni tingshuo le zhuren ma guo.*

Zhangsan Lisi know 2SG hear PFV head scold EXP

‘Zhangsan, Lisi knows that you heard that the head had scolded (him).’

The problem with the analysis of the above sentences, lies in the fact that there appears to be no apparent way to determine whether the left-peripheral expression *Zhangsan* is endowed with a purely topical property or with both topical and focal properties, hence there are no helpful cues to a methodological decision. Intuitively this is purely a matter of pragmatics. Although there could possibly be no intonational break between the first two expressions in the above sentences, in which case the dislocated constituent should be construed as projecting an unfixed node as its counterpart in (3.55b), yet native speakers would prefer to employ a pause particle or a pause tone to cut a long sentence into short segments, the so-called *liushuiju*, which I assume is also one of the reasons why Chinese is generally considered as a topic-prominent language. A typical example from Chao (1968: 101) is very illustrative.¹³

(3.59) *zuotian shangwu ya, Desheng menwaitou a, yige laotou a, diao*
 yesterday noon PAR Desheng outside PAR one-CL old man PAR fish
shanglai le yitiao shijin zhong de yu.

¹³ The literal translation of Chao’s example is mine. Also, this type of structure will be analysed in the next section.

up PFV a ten-catty 's fish

Lit. 'Yesterday noon, outside Desheng, an old man caught a ten-catty's fish.'

As for sentences like (3.58), either a pause particle or a pause tone is preferably used after the leftmost expression because otherwise, speakers would have some difficulties producing the utterance without any break. Seen in this light, sentences like (3.58a) can be characterised in the same fashion as those like (3.55a). This is shown in figure 3.9 where the zero anaphor is interpreted as a metavariable or a place-holder *U* and substituted by the *Fo* value of the left-peripheral expression *Zhangsan*.

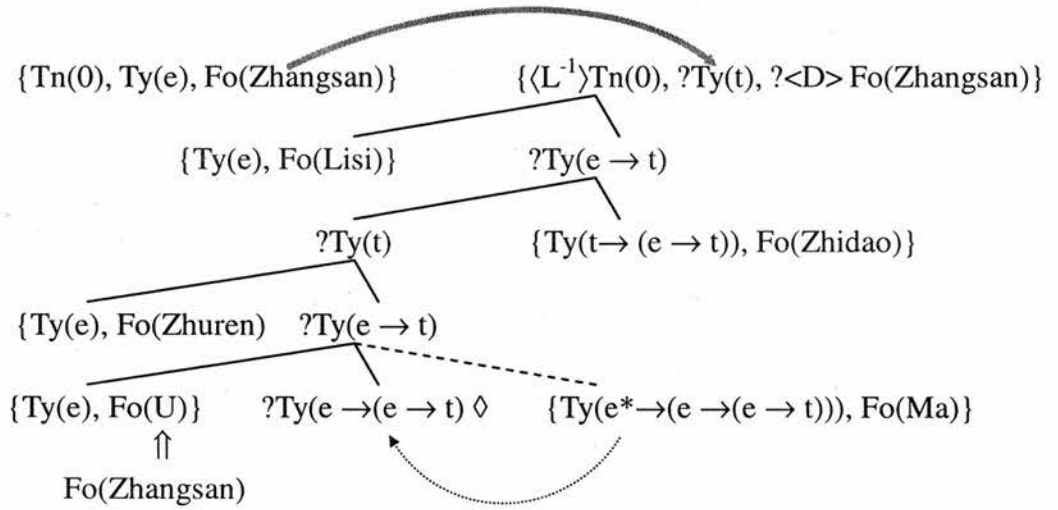


Figure 3.9: Parsing the utterance (3.58a)

Next let us see if the dynamic account developed thus far can extend to topic constructions like (3.3a), repeated here as (3.60a), which contains a *wh*-expression that can occur anywhere a noun phrase can, as in (3.60b) where the same expression appears in the object position. Similar to 'complex' topic structures like (3.58), the left-dislocated expression *Zhangsan* is normally marked either by a pause particle or a pause tone.

(3.60) a. *Zhangsan* (a), *Lisi xiang zhidao shui ma guo*.

Zhangsan PAR *Lisi* want know who scold EXP

‘As for Zhangsan, Lisi wonders who scolded him.’

b. *Zhangsan (a), Lisi xiang zhidao ma guo shui.*

Zhangsan PAR Lisi want know scold EXP who

‘As for Zhangsan, Lisi wonders who he scolded.’

The marked nature of the dislocated expression is indicative of the need to construct a LINK relation between this topicalised element and the remainder. Here we need to say a word about the action projected by the *wh*-expression. Given the in-situ nature of *wh*-words in Chinese, we are supposed to treat them as projecting a fixed node that is decorated with a metavariable *WH*, whether it is used in a question or a statement.¹⁴ The lexical specification for *wh*-expressions in Chinese can be stated as follows (cf. Kempson et al 2001):

(3.61) The lexical entry for *wh*-words (*Chinese*)

```
IF      ?Ty(e)
THEN    put(Ty(e), Fo(WH), [↓]⊥); go(⟨↑*⟩); put(Cat(Q));
ELSE    put(Ty(e), Fo(WH), [↓]⊥)
```

The lexical characterisation of *wh*-in-situ expressions reflects two types of structure: if they occur in a question form, the resulting action is to annotate the dominating node with *Cat(Q)* as well as the current node with the DU formulae; otherwise, it simply adds the DU formulae. In the case of (3.60), the *wh*-word *shui* ‘who’ just projects a metavariable that is assumed to be open-ended in the DS framework. Figure 3.10 illustrates the parse state where all words in the (a) sentence have been parsed, which will result in the annotation of the root node of the main tree with a propositional formula *Xiangzhidao(Ma(Zhangsan)(WH))(Lisi)*.

¹⁴ Here I follow the practice of DS (see Kempson et al 2001) in using ‘WH’ to stand for the metavariable assigned as the formula value and ‘wh’ to stand for the natural language expression projecting such a metavariable.

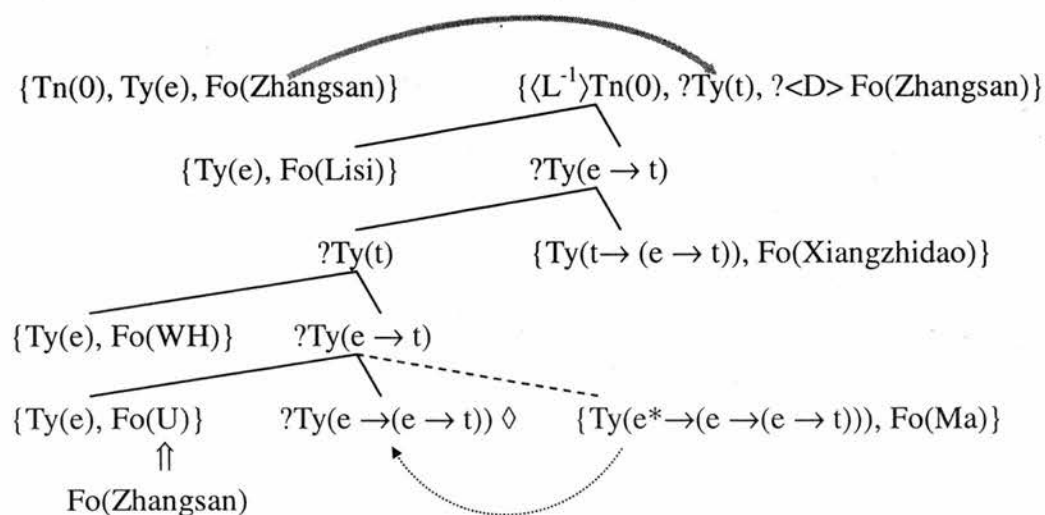


Figure 3.10: Parsing the utterance (3.60a)

The successful characterisation of topic constructions thus far gives us confidence that the dynamic account in terms of the LINK relation and unfixed node can naturally apply to topic constructions involving a sentential subject like (3.4a), where the left-peripheral expression *naxie shu* ‘those books’ can be analysed either as appearing in the topic position of the main clause, or in the topic position of the sentential subject. The empirical evidence is that for the sentence to have the former interpretation, the left-dislocated constituent is usually marked by a pause particle or a pause tone as in (3.62a), whereas for the sentence to have the latter interpretation, it does not display any intonational break as in (3.62b).

(3.62) a. *naxie shu* (ya), *xuesheng du guo hen qiguai*.

those book PAR student read EXP very strange

Lit. ‘As for those books, that students have read them is strange.’

b. *naxie shu xuesheng du guo hen qiguai*.

those book student read EXP very strange

Lit. ‘That those books students have read is strange.’

Under the first analysis, the topicalised element *naxie shu* is certainly interpreted as a

linked structure of type e to the top node of a primary propositional structure.¹⁵ The structural properties of sentences like (3.62a) can thus be characterised by treating the sentential subject as projecting a node of propositional type, as in figure 3.11 which shows that all words but the main VP have been parsed.

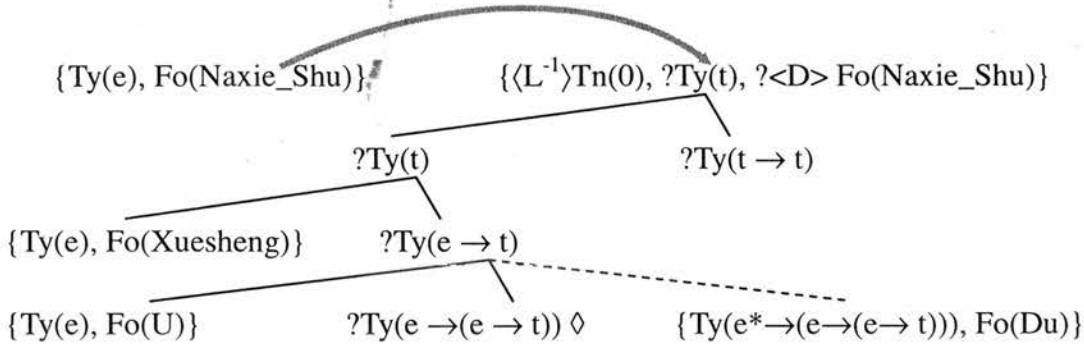


Figure 3.11: Parsing the string *naxie shu (a), xuesheng du guo*

Subsequent to the completion of the sentential subject node, which goes through substitution of the metavariable U with $Fo(Naxie_Shu)$ and merge of the unfixed predicate node with the pointed two-place predicate node, and then through functional application of functors over arguments, the main predicate *hen qiguai* ‘very strange’ is processed, satisfying the requirement on the proposition-taking node.¹⁶ Completion of the whole tree results in the annotation of the root node with a full propositional formula.

¹⁵ For convenience of discussion, the internal structure of the noun phrase is ignored here and also in other places.

¹⁶ For the dynamic account of sentential subject construction in English, interested readers are referred to Cann (2001) which focuses on the construal of expletive pronouns.

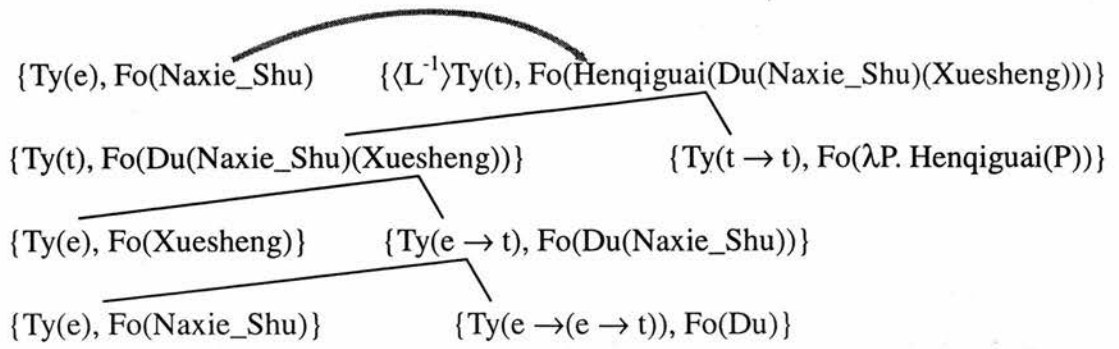


Figure 3.12: Completing the parse of (3.62a)

As can be seen, the empty category or zero anaphor (3.62a), similar to those in (3.55a), (3.58a) and (3.60a), projects a place-holder which is again construed as metavariable U and substituted by the term *naxie shu*. Clearly, the zero anaphor behaves like a pro-drop, which can be filled by a proper pronoun (cf. Yuan 1996).

(3.63) a. *naxie shu* (ya), *xuesheng du guo* (tamen) *hen qiguai*.

those book PAR student read EXP 3PL very strange

Lit. 'As for those books, that students have read them is strange.'

As for sentences like (3.62b) where there is no pause tone between the leftmost NP *naxie shu* and the following NP *xuesheng*, we expect a focal effect to apply to the displaced expression at the left periphery of the sentential subject, the empirical evidence for which is that usually there is a short pause between the subject clause and the main predicate, because otherwise speakers would have trouble producing the whole utterance. Hence the left-peripheral expression can be reasonably construed as projecting an unfixed node the syntactic underspecification of which will be resolved dynamically, as demonstrated in figure 3.13, where the unfixed node projected by the leftmost expression *naxia shu*, which is linked to the top node of the tree constructed by the subject clause, finally merges with the internal argument node projected by the verb.

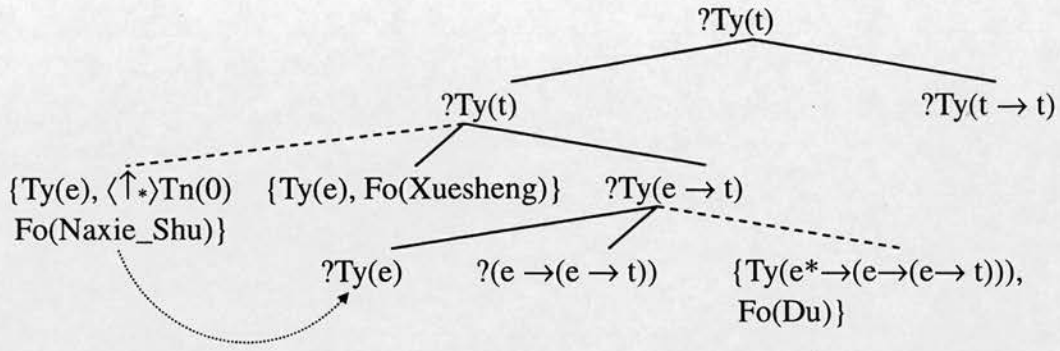


Figure 3.13: Parsing the string *naxie shu xuesheng du guo* in (3.62b)

Gapless topic construction

Now let us move on to gapless topic constructions, those with either a resumptive pronoun or a full noun phrase. The empirical evidence that the left-peripheral expression in this type of structures is normally marked by a pause particle or a pause tone, indicates that functionally it provides a context from which a propositional structure can be developed. Accordingly, gapless topic structures should be analysed as a pair of LINK trees with the topicalised element projecting an initial tree from which the main tree is constructed and from which a copy of formula is forced as a requirement. The rule of LINK-COPY TRANSITION defined in (3.56), can straightforwardly apply to this type of topic construction.

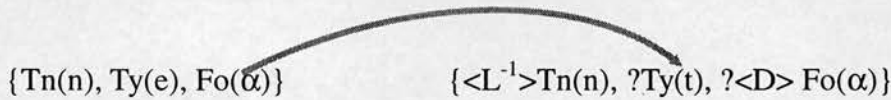


Figure 3.14: Building linked structures

Such a pair of linked trees can be employed to formalise topic structures in which a left-dislocated NP is associated with the presence of a coreferring pronoun or the presence of a coreferring full NP as shown in (3.1), repeated here as (3.64).

(3.64) a. *Zhangsan (a), zuren ma guo ta.*

Zhangsan head scold EXP 3SG

‘As for Zhangsan, the head scolded him.’

b. *Zhangsan (a), zhuren ma guo zhe jiahuo.*

Zhangsan PAR head scold EXP this guy

‘As for Zhangsan, the head scolded the guy.’

Given the modal form of requirement on the top node of the emergent LINKed structure projected for interpreting the clause following the left-peripheral NP, such an analysis of topic constructions in terms of a LINK relation would require the pronoun or a full noun phrase to be interpreted as identical to the formula value projected by the leftmost NP, no matter what distance of embedding it is, as exhibited in (3.2), repeated here as (3.65) respectively.

(3.65) a. *Zhangsan_i (a), Lisi zhidao zhuren ma guo ta_i.*

Zhangsan PAR Lisi know head scold EXP 3SG

‘Zhangsan, Lisi knows that the head scolded him.’

b. *Zhangsan_i (a), Lisi zhidao zhuren ma guo zhe jiahuo_i.*

Zhangsan PAR Lisi know head scold EXP this guy

‘Zhangsan, Lisi knows that the head scolded the guy.’

Otherwise, an ill-formed result would be yielded and as a consequence the parse would be collapsed, as shown in (3.66)-(3.71) below.

(3.66) **Zhangsan_i (a), zhuren ma guo ta_j.*

Zhangsan PAR head scold EXP 3SG

*‘Zhangsan_i, the head scolded him_j.’

(3.67) **Zhangsan_i (a), zhuren ma guo zhe jiahuo_j.*

Zhangsan PAR head scold EXP this guy

*‘Zhangsan_i, the head scolded the guy_j.’

(3.68) **Zhangsan_i (a), Lisi zhidao zhuren ma guo ta_j.*

Zhangsan PAR Lisi know head scold EXP 3SG

*‘Zhangsan_i, Lisi knows that the head scolded him_j.’

(3.69) **Zhangsan_i (a), Lisi zhidao zhuren ma guo zhe jiahuo_j.*

Zhangsan PAR Lisi know head scold EXP this guy

*‘Zhangsan_i, Lisi knows that the head scolded the guy_j.’

(3.70) **Zhangsan_i (a), Lisi xiang zhidao shui ma guo ta_j.*

Zhangsan PAR Lisi want know who scold EXP 3SG

*‘Zhangsan_i, Lisi wonders who scolded him_j.’

(3.71) **Zhangsan_i (a), Lisi xiang zhidao shui ma guo zhe jiahuo_j.*

Zhangsan PAR Lisi want know who scold EXP this guy

*‘Zhangsan_i, Lisi wonders who scolded the guy_j.’

We can use (3.66) as an example to show why failure to establish the anaphoric relation between the left-peripheral NP and the comment clause would lead to the collapse of the parse. The effect of parsing the leftmost expression *Zhangsan* through the application of LINK Adjunction is displayed in figure 3.15 below.

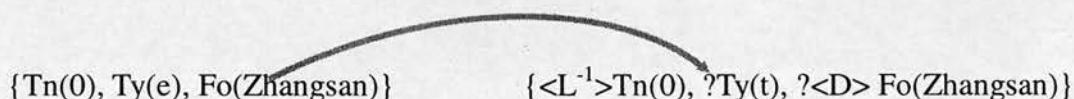


Figure 3.15: Parsing *Zhangsan* and building a LINK transition

As can be seen above, an anaphoric relation is established between a pair of partial trees, through the modal requirement forced on the second one of a copy of the formula of the initial one's top node. In the particular format $?<D> Fo(Zhangsan)$, there is no locality constraint imposed on this anaphoric relation. Without an analogue to a relative pronoun to provide such a copy as in analysing the English relative clause illustrated in Chapter 2, we could only expect the obligatory occurrence of an anaphoric expression in any subsequently introduced structure. Given that the successful parse of a clausal sequence requires all requirements to be satisfied, the requirement imposed in this LINK transition must be fulfilled. So the anaphoric expression *ta* 'he' in the comment clause of (3.66) must be interpreted as an expression

with the same formula as the left-peripheral expression *Zhangsan*.

3.4.1.2 multiple topic construction

Now let us consider if the two strategies employed to characterise single topic constructions can apply naturally to multiple topic constructions. As has been shown in section 3.1, Chinese allows two separate topics to be associated with two separate elements in one simple comment clause, and as has been discussed in section 3.3, there exists a difference in information-structural meaning between the two topics in that the left-peripheral expression is a marked topic, as can be identified morphologically by the pause particle or phonologically by the pause tone, whereas the comment-initial constituent is a topicalised focus, as can be evidenced by its uncertainty, left-dislocated as an update term and concurrently topicalised as kind of a given term.

In the light of the observation and discussion so far, it goes without saying that the LINK and unfixed-node strategies should find their application in the characterisation of multiple topic structures. Let us take (3.5a), repeated here as (3.72), and see how topic and focus effects are explained in virtue of left-right dynamics.¹⁷

(3.72) *zhe-men ke (ya), Zhangsan wo jiao le.*

this-CL course PAR Zhangsan 1SG teach PFV

Lit. 'As for this course, Zhangsan I taught.'

¹⁷ With respect to context, we could of course assign another interpretation to multiple topic sentences like (3.72). Under the following context, for instance, both *zhe-men ke* 'this course' and *Zhangsan* can be taken as topics anaphorically identified with subject and direct object respectively, and *wo* 'me' as the indirect object. In this case the first two should be taken to decorate two LINKed nodes and the latter an unfixed node.

(i) A: *Zhangsan jiao le ni zhe-men ke ma ?*

Zhangsan teach PFV 2SG this-CL course PAR

'Did Zhangsan teach you this course?'

B: *zhe-men ke (a), Zhangsan (ya), wo jiao le, Lisi mei jiao.*

this-CL course Zhangsan me teach PFV Lisi not teach

Lit. 'This course, Zhangsan, me he taught; Lisi he didn't.'

Apparently, alternative interpretations show one of the central properties of human languages as discussed in Chapter 2, namely context-dependency in the sense that almost every linguistic expression can be taken to express different interpretations in different contexts.

The first step is the scanning of lexical input from the left-peripheral NP *zhemen ke* ‘this course’ the lexical information of which gives a reading of type *e* and the pause particle or tone indicates this initial expression to be an external member of the sentence, hence forcing an analysis of a LINK relation between the first tree whose top node is annotated with $Fo(Zhemen_Ke)$ of $Ty(e)$ and the second tree whose root node is decorated with type *t* which requires a copy of the *Fo* value (*Zhemen_Ke*) from the first tree, as shown in figure 3.16 below.

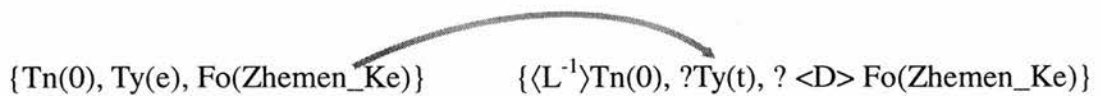


Figure 3.16: Parsing *zhemen ke* and building LINK transition

The transition from the initial tree of type *e* to the top node of the main tree, allows the propositional structure to be unfolded. The second step is introducing the unfixed node dominated by the top node, allowing the comment-initial expression *Zhangsan* to be processed. Figure 3.17 illustrates the parse state where, subsequent to the building of the unfixed node annotated with the formula $Fo(Zhangsan)$, the subject and predicate nodes are introduced, by means of Introduction and Prediction, the first of which is decorated with the formulae $Ty(e)$, $Fo(Wo)$ after the first-person pronoun *wo* ‘I’ is processed, and the pointer moves to the predicate node, indicating this is to be built next.

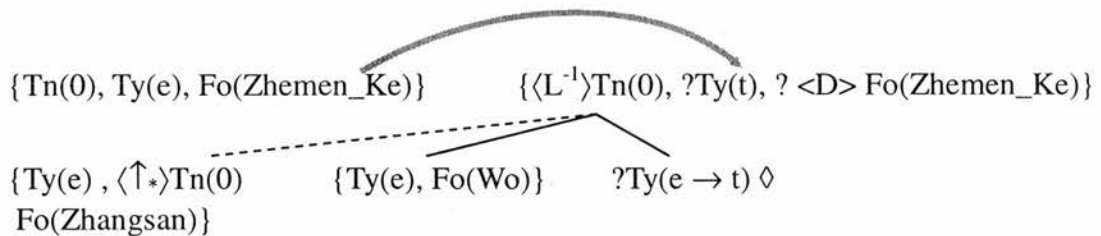


Figure 3.17: Parsing the string *zhemen ke (ya), Zhangsan wo*

What follows is the processing of the di-transitive verb *jiao* ‘teach’ which like other action verbs projects an unfixed node, since the number of its arguments is underspecified from a dynamic perspective, as can be justified by the fact that it sometimes takes only one argument as in (3.73a), sometimes two arguments as in (3.73b), sometimes two arguments plus one adjunct as in (3.73c).

(3.73) a. *zhe-men ke (ya), wo jiao le.*

this-CL course PAR 1SG teach PFV

‘As for this course, I taught.’

b. *zhe-men ke (ya), Zhangsan wo jiao le.*

this-CL course PAR Zhangsan 1SG teach PFV

Lit. ‘As for this course, Zhangsan I taught.’

c. *zhe-men ke (ya), Zhangsan wo jiao le yi-nian.*

this-CL course PAR Zhangsan 1SG teach PFV one year

Lit. ‘As for this course, Zhangsan I taught for one year.’

Subsequent to the processing of the verb that projects an unfixed node annotated with the formulae $\{Ty(e^* \rightarrow (e \rightarrow (e \rightarrow t))), Fo(Jiao)\}$, the pointer moves back to the open functor node, and the construction rules of Introduction and Prediction can apply successively until all the arguments of the verb are parsed. First, the one-place predicate node expands to have two daughter nodes. Following convention, the pointer moves down to the argument daughter, requiring it to be constructed. Since there is no further lexical input, the unfixed node projected by the leftmost expression *Zhangsan* merges with this open argument node, satisfying both requirements, as shown in figure 3.18.

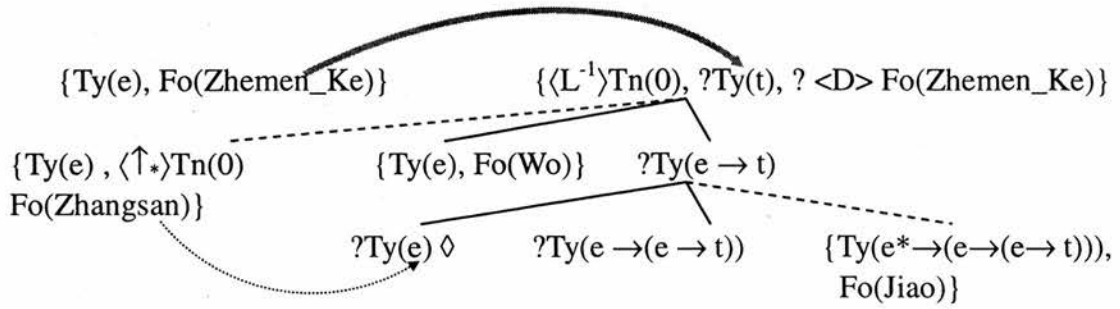


Figure 3.18: Fixing the unfixed argument node

The treenode address of the unfixed argument node being located, the pointer moves to the two-place predicate node. The modal requirement on the root node of the main tree for a type e expression bars the merge of the unfixed predicate node with this open predicate node. The two-place predicate node gives birth to two daughter nodes, again through Introduction and Prediction. The argument daughter is required to be developed first. Given the lack of linguistic input, a metavariable can be assigned, hence getting interpreted relative to context. The unfixed predicate node then merges with the three-place predicate node, resolving the verb's type underspecification, as demonstrated in figure 3.19.

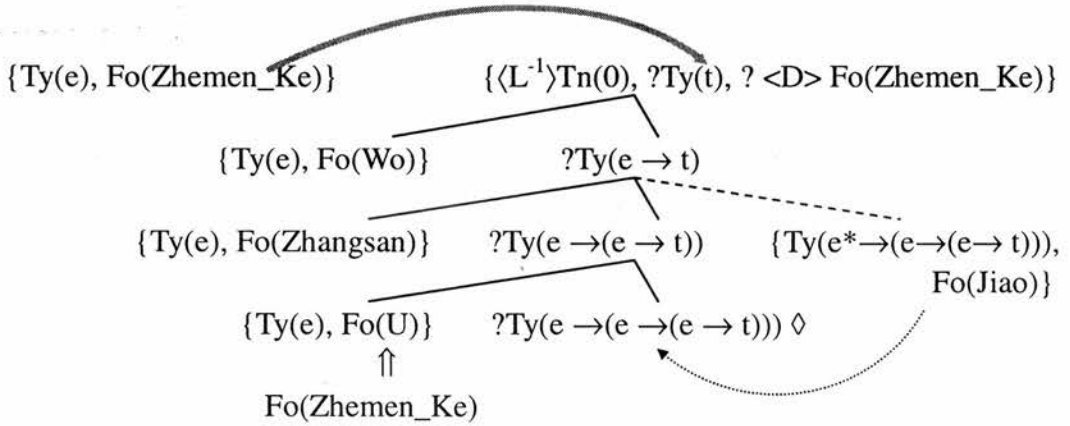


Figure 3.19: Fixing the unfixed predicate node

Completion of the second tree will give rise to another independent structure with a propositional formula $Fo(Jiao(Zhemen_Ke)(Zhangsan))(Wo))$ annotating its root node, reflecting the anaphoric relation between the pair of linked structures involving the

requirement of a copy of formula, as illustrated in figure 3.20.

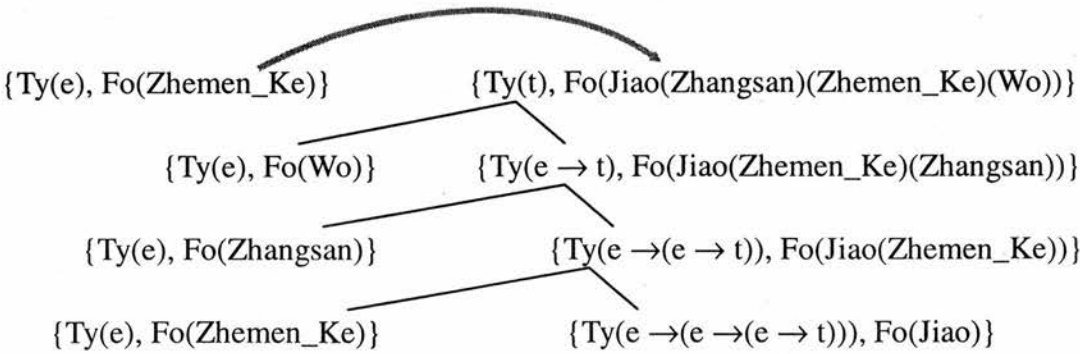


Figure 3.20: Completing the parse of (3.72)

Let us now move on to the other type of multiple topic structures in which expressions in the topic position are related to elements in different clauses as already illustrated in (3.6a), repeated here as (3.74).

(3.74) *Lisi (a), wo gaosu le (ta) na-ge defang wo qu guo.*

Lisi PAR 1SG tell PFV 3SG that-CL place 1SG go EXP

Lit. 'Lisi, I told (him) that that place I have been to.'

Similar to their counterparts in the single clause structure like (3.72), the two expressions in the topic position have different readings from the one in the topic position of the main clause, which is often morphologically or phonologically marked and hence construed as a given term, and the other one in the topic position of the subordinate clause, which is often optionally marked by a stress and hence interpreted as an update term. Figure 3.21 is illustrative of the different syntactic effects displayed by the two left-dislocated elements.

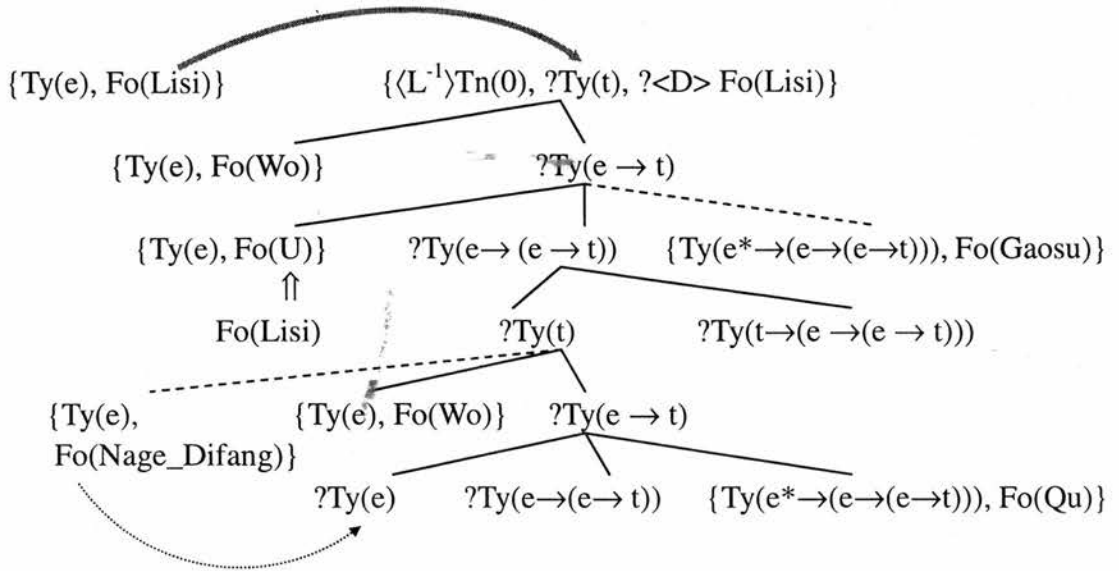


Figure 3.21: Parsing the utterance (3.74)

Completion of the parse of (3.74) will result in the annotation of the top node of the second tree with a propositional formula $Fo(Gaosu(Qu(Nage_Difang)(W))(Lisi)(W))$, after the content value of metavariable U is substituted by the formula value of the left-peripheral expression $Lisi$, meeting the demand for a copy of formula from the first tree and thus establishing the LINK relation between the pair of trees.

To summarise this section, a dynamic analysis of topic constructions characteristic of English style has been proposed in terms of the LINK and the unfixed treenode relation. The distinction between the marked topic and the unmarked topic or the topicalised focus, which has been discussed in section 3.3, has been captured by the above two strategies. The dynamic analysis has been shown to hold for the complex as well as the general patterns of topic structures. A comprehensive account of topic constructions in Chinese as a whole, of course, requires us to extend the dynamic analysis developed here to those characteristic of Chinese style, which is the task of the next section.

3.4.2 Chinese-style topic construction

Having provided an explanatory account of topic constructions characteristic of

English style, let us proceed next to topic constructions characteristic of Chinese style. Chinese-style topic constructions are widespread in East Asian Languages like Japanese and Korean as well as Chinese. As has been discussed in sections 3.1 and 3.2, the significant difference between the two major types of topic structures is that as far as English-style topic constructions are concerned, the relation between the topic and the comment clause is syntactically encoded, hence the so-called coreference relation, whereas as far as Chinese-style topic constructions are concerned, the topic expression and the comment clause are semantically and/or pragmatically related to one another, hence an aboutness relation.

To characterise topic constructions of Chinese style, we face the challenge of how to reflect the aboutness relation between the topic expression and the comment clause. Since there is no element within the comment clause that corresponds to the element in the TOP position, we would only expect to see the construction of a LINK relation between the topicalised expression and the remainder structure. The framework we have adopted so far, however, opens up the possibility that the concepts of a LINK relation and anaphoric processes of construal are logically independent, and thus allows the introduction of LINKed structures which impose no requirement for any shared element (cf. Cann et al, in print).

The construction of paired trees by the incorporation of a LINK relation between them during the process of inducing semantic structures, suggests that there may be only a semantic/pragmatic connectedness instead of an anaphoric relatedness between the two semantic trees. Technically, the topicalised expression can be analysed as an expression that decorates an independent structure to which another independent structure or a propositional structure is linked. Since the two structures represented by two semantic trees do not share a common term in the output, the LINK relation can thus be construed either as the second tree as a whole connecting the first tree, or one of the elements in the second tree connecting the first tree.

I shall explore this possibility and show that the concept of building linked structures is more general than is provided by the anaphoric processes so far defined.

3.4.2.1 *Single topic construction*

Topic constructions characteristic of Chinese style, just like those characteristic of English style, can also be divided into two types, namely single topic constructions and multiple topic constructions. First let us deal with those topic structures containing a single topic which also displays a left-peripheral effect. Consider (3.7), repeated here as (3.75) below.

- (3.75) a. *jiu-ge miyu Lisi caidui le liu-ge.*
nine-CL riddle Lisi resolve PFV six-CL
'Nine riddles, Lisi resolved six.'
- b. *yuyanxue Zhangsan pianai yuyixue.*
linguistics Zhangsan prefer semantics
'Linguistics, Zhangsan prefers semantics.'
- c. *shenghuo Wangwu xihuan xiao chengshi.*
life Wangwu like small city
'As for life, Wangwu loves towns.'

As is already known, the relation between the topic expression and the comment clause is built via semantic and/or pragmatic rather than syntactic means. The comment clause in (3.75a) contains a lexical item *liu-ge* 'six' that is semantically/pragmatically linked to the topic *jiu-ge miyu* 'nine riddles', because the former is a part drawn from the latter; in (3.75b), the subject *yuyixue* 'semantics' is also semantically linked to the expression *yuyanxue* 'linguistics' in the TOP position, because the former is a branch of the latter; finally, in (3.75c), *xiao chengshi* 'small cities' mentioned in the comment clause is pragmatically linked to the domain of reference *shenghuo* 'life' specified in the topic, and the relation between the topic and the comment is apparently relevance-based in the sense of Sperber & Wilson (1995).

Having had a clear idea of the essential properties of Chinese-style topic constructions, let us now turn to the characterisation of these structures. Given that the topicalised expression serves as a frame or domain of reference within which the comment clause as the main predication holds, we can define a general construction rule to characterise the process of LINK adjunction between two trees with the first tree providing context for development of the second tree but imposing no requirement on the second one for a copy of its own formula. The transition from the initial independent structure projected by the topic expression to the subsequent propositional structure to be constructed by the comment clause can be generalised by a rule as stated in (3.76), where compared with the LINK-COPY TRANSITION rule in (3.56) defined for English-style topic structures, the output tree lacks a demand for a copy of formula from the input tree.

(3.76) LINK TRANSITION (*Chinese style*)

$$\frac{\{Tn(n), Ty(e), \dots, \Diamond\}}{\{\{Tn(n), Ty(e), \dots, \}, \{ \langle L^{-1} \rangle Tn(n), ?Ty(t), \Diamond \} \}}$$

Firstly, let us consider the parse of (3.75a). The left-peripheral expression *jiu-ge miyu* ‘nine riddles’ is analysed as projecting an independent structure of type *e* to which the unfolding primary structure of type *t* is linked. Figure 3.22 shows that subsequent to the transition from the first tree the propositional structure is developed and the main tree of which can be completed as in canonical structures:

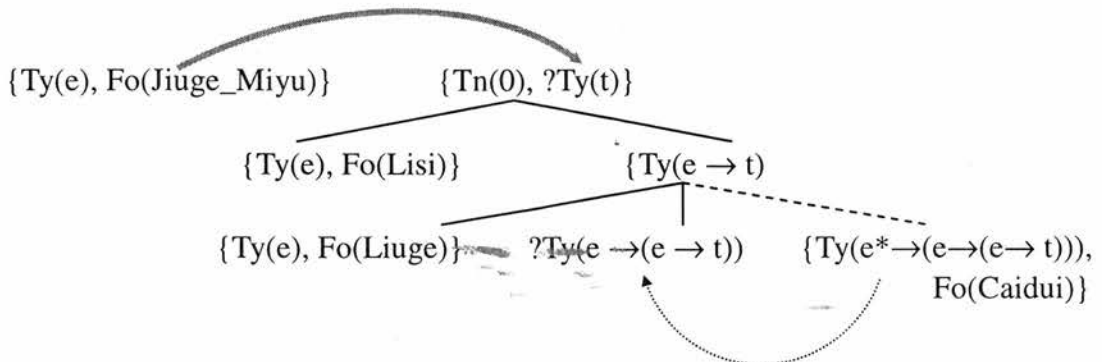


Figure 3.22: Parsing the utterance (3.75a)

The intuitively identified aboutness relation that holds between the topic and the comment is not directly captured through a LINK relation between the two independent structures. The LINK relation in turn allows a pragmatic inference to be derived from the logical formulae associated with the interpretation of each structure. The logical structure of (3.75a), for instance, can be roughly set out as $Fo(Jiuge_Miyu) \models Fo(Caidui(Liuge)(Lisi))$, where \models can be read as ‘supports a judgement that...’. The effect of applying the LINK TRANSITION rule to sentences like (3.75a) is that it is under the context induced by *jiuge miyu* ‘nine riddles’ that the comment clause *Lisi caidui le liuge* is interpreted, that is, the left-hand side serves as the premise and the right-hand side the conclusion. If the premise is changed, the conclusion as the result of interpretation may probably not be arrived at. For example, if the topic *yuyanxue* ‘linguistics’ in (3.75b) is changed to *jingjixue* ‘economics’, the relevant logical structure $Fo(Pianai(Yuyixue)(Zhangsan))$ is unlikely to be held, due to the fact that semantics is not a branch of economics.

Finally, let us consider if the dynamic account developed here for Chinese-style topic constructions can explain a certain problematic phenomenon of topicalisation. The following example is adapted from Xu & Langendoen (1985) by Y. Huang (1994), which is taken to provide a natural ‘bridge’ between clearly English-style and clearly Chinese-style topic constructions.

(3.77) *Caiyuanzi, Lao Wang yijing zhongshang \emptyset le.*

vegetable garden Lao Wang already plant SFP

‘The vegetable garden, Wang has already grown (e.g. vegetables) in (it).’

The comment clause contains a zero anaphor as in an English-style topic sentence, but the zero anaphor is not syntactically but pragmatically related to the topic as in a

Chinese-style topic construction. Y.Huang claims that the antecedent for the zero anaphor has to be ‘bridge’-inferred by the I-principle, namely the zero anaphor refers most naturally to the vegetables rather than the garden itself. If we analyse the topicalised expression and the gapped remainder string as projecting a pair of linked structures, the ‘bridging inference’ can be more effectively reflected in the process of tree growth (see Matsui 2000 for detailed discussion of the same issue). Figure 3.23 reflects the parse state where the zero anaphor is construed as a metavariable U whose content value awaits to be instantiated.

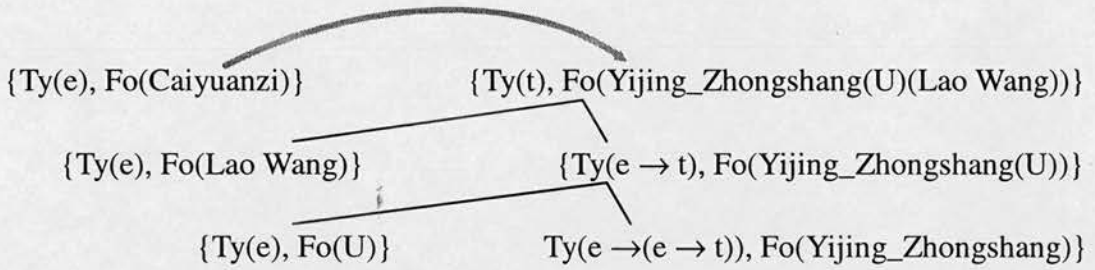


Figure 3.23: Parsing the utterance (3.77)

For the propositional formula $Fo(Yijing_Zhongshang(U)(Lao\ Wang))$ to hold, the metavariable U cannot be substituted by the logical formula $Fo(Caiyuanzi)$ because it would result in the unnatural interpretation in which *Lao Wang* planted *caiyuanzi* ‘vegetable garden’ itself. This has to be pragmatically determined, so we would have infelicity if we take the empty category and the topic expression to be co-indexed. In the technical sense, when the topic projects a linked structure of type e , it does not impose an additional requirement on the subsequent structure of type t for a copy of formula, hence the impossibility of $caiyuanzi = U$, but $caiyuanzi \models U$. The LINK relation between the two logical structures would then force the hearer to think about what is most likely to be planted in a vegetable garden, hence the conclusion that U must be something like *shucai* ‘vegetables’. The pragmatic inference would naturally result in that it is the vegetables rather than anything else that have been planted, i.e. $caiyuanzi \models$ ‘vegetables’. Similarly, the interpretation of the zero anaphor may not

arrive at the same result if the premise *caiyuanzi* is changed to *bangongshi* ‘office’, because according to our world knowledge an office is not a place for planting vegetables.

3.4.2.2 Multiple topic construction

As already illustrated in 3.1, topic constructions characteristic of Chinese style, like those characteristic of English style, are not restricted to one single topic structure. Two or more topics are allowed in one construction, provided that the aboutness condition is satisfied. Given that LINK Adjunction is employed in the analysis of single topic constructions as the canonical strategy for projecting some propositional structure, the strategy of constructing a pair of linked structures with the first one imposing no demand on the second one for a copy of its own formula could be used successively to allow the multiple topics to be parsed one after another. Presumably, the successive application of a LINKed structure form of analysis would result in multiple pairs of linked structures. Consider the multiple topic sentences in (3.8), repeated here as (3.78), where pause particles are added to tell the whole story.

(3.78) a. *zuqiu (ma), Baxi qiuyuan (ne), fenge youmei.*

football PAR Brazil player PAR style elegant

Lit. ‘Football, Brazilian players, (their) style is elegant.’

b. *Zhongguo (a), Beijing (ne), mingsheng (ma), Changcheng zui*

China PAR Beijing PAR places of interest PAR Great Wall most
zhuming.

famous

Lit. ‘China, Beijing, places of interest, Great Wall is the most famous.’

(Y.Huang 1994)

c. *Yingguo (a), daxue (ma), Niujin Jianqiao (ne), xuesheng (ya),*

England PAR university PAR Oxford Cambridge PAR student PAR
zhiliang gao.

quality high

Lit. 'England, universities, Oxford and Cambridge, students, quality is high.'

Each of the subordinate topics in multiple topic constructions, as pointed out by Y.Huang (2000), has a twofold function: on the one hand, it serves as the target for the preceding topic; on the other hand, it functions as the frame of reference for the following comment. For instance, *Baxi qiuyuan* 'Brazilian player' in (3.78a), is the target of the main topic *zuqiu* 'football', viz. further limiting the domain of predication, and as a second topic further specifies the frame of reference within which the comment clause *fenge youmei* 'style is elegant' holds. As for (3.78b), the main topic *Zhongguo* 'China' targets the second topic *Beijing* which then targets *mingsheng* 'places of interest' which further limits the applicability of the proposition *Changcheng zui zhuming* 'the Great Wall is the most famous'. Finally in (3.78c), there appears a hierarchical relation in terms of domain between the four topic expressions *Yingguo* 'England', *daxue* 'university', *Niujin Jianqiao* 'Oxford and Cambridge' and *xuesheng* 'student', where the first one *Yingguo* targets *daxue* which in turn targets *Niujin Jianqiao* which in turn targets *xuesheng*.

Let us now turn to the analysis of Chinese multiple topic structures in terms of a LINK relation. To characterise this sort of construction, we need to define a rule of construction for the separate topics to be parsed one by one, as follows.

(3.79) $e \Rightarrow e$ TRANSITION (*Chinese style*)

$$\frac{\{Tn(n), Ty(e), \dots, \diamond\}}{\{\{Tn(n), Ty(e), \dots, \}, \{\langle L^{-1} \rangle Tn(n), ?Ty(e), \diamond\}\}}$$

To characterise Chinese-style multiple topic constructions, the above $e \Rightarrow e$ Transition rule must work together with the $e \Rightarrow t$ Transition rule in (3.76) defined to characterise Chinese-style single topic construction, repeated here as (3.80) below.¹⁸

¹⁸ Having these stacked LINK relations, we can extend the Marten-style analysis of verb predicate underspecification to nominal predicate underspecification, particularly when quantification is taken

(3.80) $e \Rightarrow t$ TRANSITION (*Chinese style*)

$$\frac{\{Tn(n), Ty(e), \dots, \diamond\}}{\{\{Tn(n), Ty(e), \dots, \}, \{<L^{-1}>Tn(n), ?Ty(t), \diamond\}\}}$$

Clearly, the above two construction rules involve no transfer of information from tree to tree, which principally reflects the characteristics of multiple topic constructions where the topic expressions, main or subordinate, are related to one another, basically at the semantic or pragmatic level. This line of analysis captures both the syntactic and semantic properties of multi-topic structures: syntactically the distinct topics appear to occur independent of one another, yet semantically they work together closely for a proposition built by the comment clause to hold.¹⁹

Next I shall demonstrate how (3.78a), a two-topic construction, and (3.78c), a four-topic construction can be characterised in terms of the process of tree growth, and how the multiple topic effects can be explained as consequences of basic tree growth processes. As in the derivation of sentences with one single topic in subsection 3.4.2.1, the first action is that the leftmost expression *zuqiu* ‘football’ creates an independent structure annotated with $Ty(e)$, $Fo(Zuqiu)$ and linked to another independent structure decorated with $<L^{-1}>Tn(n)$, $?Ty(e)$, as displayed in figure 3.24.

into account. So it might be possible that there are some cases of multiple topic constructions which favour at least one of the alternative analyses: the internal structure is the building of a term whose restrictor specification is given first by its first nominal, but then by extending the derived term, in virtue of the additional specification and so on, so that the final structure is of a tree decorated with composite terms and just one LINK relation to the root and primary structure, which itself has a number of linked trees that have been successively introduced and compiled back into it. I shall not explore the extension of this work here, especially with respect to quantification, although this is certainly a good topic for future research. I am very grateful to Ruth Kempson for pointing out this to me.

¹⁹ In footnote 11, I suggested that we can use the Topic Structure Introduction Rule in Cann et al (in press) to characterise apposition constructions as well as single topic constructions, because the rule allows us to create a single term from a LINKed term. But it should be pointed out that when the rule applies to multiple topic constructions, this is not possible, because the terms do not together identify a single entity. Instead, as noted in the text, they set up a context or a restricted domain of reference for the interpretation of the main proposition.



Figure 3.24: Parsing the first topic of (3.78)

The next step in the sequence of actions is the processing of the second leftmost constituent *Baxi qiuyuan* ‘Brazilian players’. Just like the initial topic, this subordinate topic projects an independent structure. But unlike the initial one, this second topic projects a linked structure to the top node of an unfolding propositional structure. This line of analysis is indeed a reflection of the fact that to borrow the words of Chafe (1976), a subordinate topic is used to further limit the applicability of the main predication to a more restricted domain. The two-topic effects are displayed in figure 3.25.

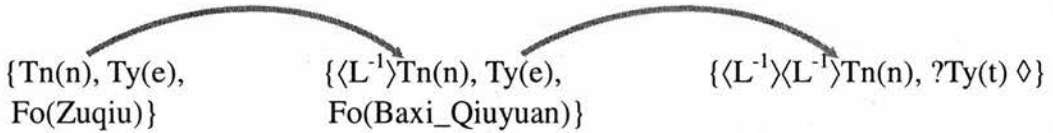


Figure 3.25: Parsing the second topic of (3.78a)

After the transition from the second tree to the primary tree, the unfolding propositional structure can be developed in the same fashion as a canonical sentence. Figure 3.26 displays a fully grown tree:

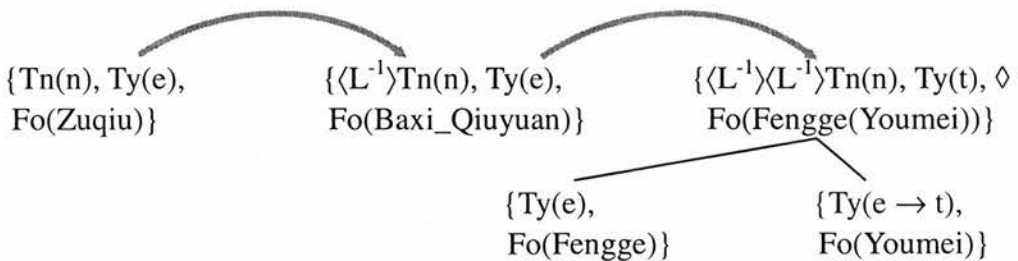


Figure 3.26: Parsing the whole string of (3.78a)

Presumably, the four-topic construction (3.78c) can be characterised in the same

fashion as (3.78a). Figure 3.26 demonstrates how the multiple topic effects are reflected in the left-right dynamics of tree building with one tree serving as context for growth of another tree.

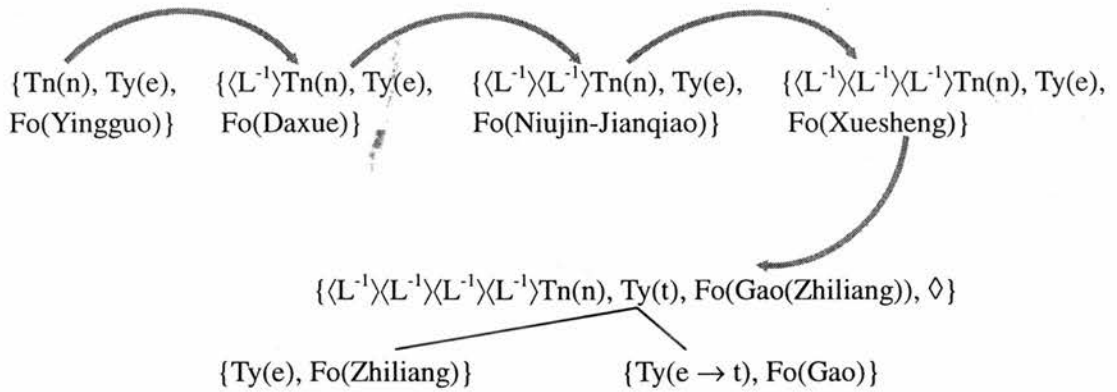


Figure 3.27: Parsing the whole string of (3.78c)

Notice how the dynamics of the present framework provides a straightforward characterisation of the problematic multiple topic constructions characteristic of Chinese-style. To begin with, the LINK relation fruitfully reflects the aboutness relation between a variety of topics and also between the topics and the comment: the interpretation of the topicalised expressions as linked structures of type e to the unfolding propositional structure of type t without any requirement for a copy of formula, provides a semantics- or pragmatics-based explanation for the wellformedness condition of the topic construction at issue. In the case of (3.78b), for instance, the leftmost expression *Zhongguo* ‘China’ first establishes a main domain of reference within which the predication *Changcheng zui zhuming* ‘The Great Wall is the most famous’ holds, the second leftmost expression *Beijing* then limits the predication to a restricted domain, and finally the third leftmost expression *mingsheng* ‘places of interest’ further limits the predication to a more restricted domain within which the truth condition of the proposition is enhanced, or guaranteed, hence complete acceptability of the sentence as a multiple topic construction whose interpretation can also be truth-conditionally formalised as follows.

|| China || ⊢ || Beijing || ⊢ || Places of interest || ⊢ || The Great Wall is the most famous ||

To summarise this section, the LINK strategy employed to characterise English-style topic structures has been extended to Chinese-style topic structures. The rule of LINK Adjunction, which has captured the anaphoric relation between topic and comment in English-style topic constructions, has been modified to allow the construction of LINKed structures without the imposition of any formula-copying requirement. Thus the aboutness relation between topic and comment in Chinese-style topic constructions has been captured.

Now we can get a feel of the extent to which the two notions ‘topic’ and ‘focus’ fail to receive sufficient explanation. As has been shown, without setting against a dialogue background, it would be difficult to provide adequate explanation for these notions. Under the analysis presented here, the two informal concepts ‘topic’ and ‘focus’ used in the description of left-dislocation structures can be explained in dynamic terms: topic is shown to provide a point of departure from which the comment clause is developed, so it can be defined as a given term from which a propositional structure is constructed; to the contrary, focus is shown to provide a new term relative to some proposition to be taken as context, so it can be defined as an update term to a given propositional structure.

3.4.3 A comparison of the dynamic analysis with previous ones

A comparison of the dynamic analysis presented here with previous ones will show how the dynamic approach provides a notable advantage in accounting for complex linguistic phenomena like topic constructions in Chinese and why a full explanation of Chinese topic constructions cannot be sought in only syntactic, semantic or pragmatic terms, but in a dynamic perspective that combines all three. As reviewed in section 3.2, previous analyses of topic constructions generally involve abstract and static representations of syntactic structure as those in mainstream syntactic analyses, or

loose and ambiguous generalisations as in those pragmatic analyses. With the left-to-right dynamics of natural language encoded in the DS formalism, the grammatical machinery required to account for topic constructions is massively simplified, and as a result a parsimonious, straightforward explanation is provided.

The parsimonious, straightforward nature of the dynamic analysis is reflected in the economical use of technical entities. Firstly, unlike mainstream syntactic analyses as in J.Huang's (1982, 1984, 1987, 1989), the dynamic analysis does not involve a multiplicity of abstract, static notions, but only two dynamic notions, underspecification (both syntactic and semantic), and pragmatic inference. Under the dynamic approach which replaces all concepts of movement in favour of incremental construction of semantic structure, the aboutness relation between the topic and the comment is simply established through the DS strategy of a LINK transition by building a pair of trees with the initial one projected by the topic expression linking a second one for the comment clause to be developed. The modal requirement $\langle D \rangle$ $Fo(\alpha)$ imposed on the second tree forces the anaphoric relation between the topic and the comment. This requirement must be satisfied to ensure that the parse is successful, so we expect an anaphoric expression to obligatorily occur in the subsequently constructed structure. The zero anaphor in the comment clause thus cannot be construed as a variable, as J.Huang did, but a term with the same formula $Fo(\alpha)$ as the topic expression. In this sense, the zero anaphor is just like a real pronoun, the construal of which is pre-determined in that its value is provided by the topic expression.

As for the pragmatic analysis proposed by Y.Huang (1994), it apparently lacks a solid theoretical foundation. As already discussed in section 3.2.2, an antecedent search procedure for zero anaphors should follow the preference order *topic* > *subject* > *object*, rather than the one postulated by him, *subject* > *object* > *topic*, for the simple reason that topic is always the most salient term at the informational level, as agreed by Y.Huang himself. The informational saliency of the topic expression can best be

illustrated from a dynamic perspective. Under the dynamic analysis which bases the parsing process on a left-to-right basis, topic as a left-peripheral expression is shown to provide a point of departure from which the comment clause can be developed. With the imposed requirement of a copy of the topic expression's formula, as formalised in the format $\langle D \rangle \text{ Fo}(\alpha)$, the anaphoric connectedness between the topic and the comment has to be established, which as a consequence forces an anaphoric expression to emerge in the comment in order to meet the requirement. Viewed in this perspective, the antecedent search procedure for the zero anaphor is also pre-determined: topic is always the No.1 target in search of an antecedent for the zero anaphor. Note how notable the advantage of the dynamic analysis over the pragmatic analysis is in incorporating the left-to-right dynamics of language processing.

Finally, with a system allowing the triple of syntax, semantics and pragmatics each playing a role in determining well-formedness, DS certainly has more explanatory power than the structural analyses, as the one adopted by Shi (2000) which only admits the role of syntax and hence cannot explain the aboutness relation in Chinese-style topic structure. The DS framework, which admits pragmatic inference into linguistic explanation by integrating the insights of Relevance Theory, opens up the possibility that the aboutness relation between the topic expression and the comment clause could also be accounted for in the dynamic perspective. The construction of paired trees by the incorporation of a LINK relation between them during the process of inducing semantic structures, suggests that there may be only a semantic /pragmatic connectedness instead of an anaphoric relatedness between the two semantic trees, with either one of the elements in the second tree connecting the first tree or the second tree as a whole connecting the first tree. The two trees remain as independent structures in the output, suitably semantically or pragmatically linked, as has been shown in section 3.4.2. The aboutness relation that holds between the topic and the comment is captured, albeit not directly, through the LINK relation which in turn allows a pragmatic inference to be derived from the logical formulae associated with interpretation of each structure.

In one word, with the very dynamics at its heart, the DS formalism provides all that is needed to explain effects of topic and (topicalised) focus, and is able to articulate these concepts familiar from the extensive topic literature.

3.5 Summary

In this chapter, I have provided a comprehensive account of Chinese topic constructions, both English-style and Chinese-style, within the framework of DS in which two strategies, linked structures and unfixed node, are available. As far as English-style topic constructions are concerned, the availability of two forms of analysis perfectly reflects the syntactic properties of the left-peripheral expressions, namely the certainty of the topicalised expressions with purely topical properties and the uncertainty of the topicalised focus expressions with both topical and focal effects. As far as Chinese-style topic constructions are concerned, the line of analysis in terms of LINK relation without a requirement of a copy of the formula from the preceding structure, fruitfully captures the aboutness relation between the topic and the comment in single topic structure, and between the multiple topics and the comment in multiple topic structure. In the next chapter, I shall further apply the DS theory to another grammatical construction, i.e. passive construction, and shall demonstrate that like topic structure passive structure in Chinese also displays left-periphery effects, which can also be characterised by means of one of strategies employed in this chapter.

Chapter 4

Passive Constructions

4.1 Introduction

The issue of *bei* constructions as passive constructions in Chinese has long been of great interest and still of great controversy among linguists working on Chinese, and naturally a number of characterisations have been made in the literature. Nevertheless, a unified account of *bei* constructions remains to be achieved, and even the status of the morpheme *bei* itself remains to be articulated. This may be attributed to the fact that *bei* constructions exhibit a surprisingly diverse body of properties as demonstrated in (4.1)-(4.5) below.

- (4.1) a. *Zhangsan bei Lisi da guo.*
Zhangsan BEI Lisi beat EXP
'Zhangsan has been beaten by Lisi.'
- b. *Zhangsan bei Lisi ma guo.*
Zhangsan BEI Lisi scold EXP
'Zhangsan has been scolded by Lisi.'
- (4.2) a. *fangzi bei chai le.*
house BEI demolish PFV
'The house was demolished.'
- b. *chuanghu bei za le.*
window BEI smash PFV
'The window was smashed.'
- (4.3) a. *Zhangsan bei Lisi daduan le tui.*
Zhangsan BEI Lisi break PFV leg
'Zhangsan's leg was broken by Lisi.'

- b. *Zhangsan bei Lisi jian le toufa.*
 Zhangsan BEI Lisi cut PFV hair
 'Zhangsan's hair was cut by Lisi.'
- (4.4) a. *Zhangsan bei Lisi ba tui daduan le yi-tiao.*
 Zhangsan BEI Lisi BA leg break PFV one-CL
 'One of Zhangsan's legs was broken by Lisi.'
- b. *Zhangsan bei Lisi ba toufa jian le yi-cuo.*
 Zhangsan BEI Lisi BA hair cut PFV one-lock
 'One lock of Zhangsan's hair was cut by Lisi.'
- (4.5) a. *men shang bei haizimen wa le yi-ge dong.*
 door on BEI children dig PFV one-CL hole
 Lit. 'On the door was dug-a-hole by the children.'
- b. *hu li bei cunminmen yang le henduo eyu.*
 lake in BEI villagers raise PFV many crocodile
 Lit. 'In the lake was raised-many-crocodiles by the villagers.'

The pair of sentences (4.1a-b) represent the canonical agentive pattern where the pre-*bei* constituent, which is coreferential to the gap in the postverbal object position, acts as the patient and the post-*bei* constituent as the agent;¹ (4.2a-b) pertain to the other canonical pattern where the agent is absent because, as in English, it is unnecessary to mention or unknown at least to the speaker; (4.3a-b) are one of the problematic patterns in which there is an NP in the object position which is termed a 'retained object' within analyses of traditional and generative grammars, as opposed to the canonical patterns in which there is a gap in the object position; (4.4a-b) exhibit another problematic pattern which involves another well-known grammatical structure in Chinese, the *ba* construction; finally, (4.5a-b) are *bei* sentences with a locative phrase occurring before the morpheme *bei*, and semantically the locative

¹ The terms 'agent' and 'patient' are used throughout this dissertation in the sense of Andrews (1985: 68) who defines the former as "a participant which the meaning of the verb specifies as doing or causing something, possibly intentionally", and the latter as "a participant which the verb characterises as having something happen to it, and as being affected by what happens to it."

expression appears to be on the same footing as its counterparts in the preceding four patterns.²

In this chapter, I investigate the issue of the *bei* construction within the framework of DS and attempt to provide a principled account of its diverse patterns. On the basis of a detailed examination of the basic facts about *bei* constructions, I treat the *bei* construction as a special type of left dislocation, and argue that (i) the morpheme *bei* is actually a voice particle devoid of any semantic content, and its fundamental function is to signal that the pre-*bei* argument is the goal of the action; it is by virtue of this peculiar function that *bei* is generally regarded as marker of passives and *bei* sentences are universally considered as passives in Chinese; (ii) from the typological perspective, the voice behaviour in Chinese is a type of pragmatic voice; (iii) from the functional perspective, *bei* constructions share certain similarities with topic constructions. Under the dynamic approach, various patterns of *bei* constructions can be successfully characterised in an original and elegant way.

The chapter is organised as follows. Section 4.2 critically reviews a number of existing influential analyses of *bei* constructions. Section 4.3 provides a preliminary analysis of *bei* constructions, particularly the canonical patterns. In section 4.4, I extend the initial

² There are another two patterns of *bei* sentences which are worth mentioning. One is illustrated as in (i)-(ii), where a well-formed object clause occurs before the morpheme *bei*. The other is exhibited as in (iii)-(iv), where the *bei* sentence appears to be a pivotal construction, a subtype of a serial verb construction.

- (i) *Zhangsan he qiu (zhe-jian shi) bei Lisi faxian le.*
Zhangsan drink wine this-CL matter BEI Lisi find PFV
'That Zhangsan drank wine was found by Lisi.'
- (ii) *Lisi tao-xue (na-jian shi) bei mama zhidou le.*
Lisi play-truant that-CL matter BEI mum know PFV
'That Lisi played truant was known by his mother.'
- (iii) *Zhangsan bei taitai bizhe jie le jiu.*
Zhangsan BEI wife force swear off PFV wine
'Zhangsan was forced to swear off drinking by his wife.'
- (iv) *Lisi bei laoban pai dao nanfang gongzuo le.*
Lisi BEI boss send to south work PFV
'Lisi was sent by his boss to the south to work.'

Although I have not addressed them in this chapter, the dynamic analysis of the five typical patterns can be extended to them.

analysis to the problematic patterns. Section 4.5 summarises with a conclusion.

4.2 Previous analyses

Previous analyses of *bei* constructions have of course centred on the particular morpheme *bei*. Although it has been generally acknowledged as the morphological marker of passive sentences in Chinese, there has been no consensus so far on the syntactic function and even the part of speech of this passive morpheme. Roughly speaking, there have been three influential analyses in the current literature with respect to the status of the word *bei* which I now review.

4.2.1 The Preposition Hypothesis

A very popular existing hypothesis is that the word *bei* is a preposition, given the observable fact that what immediately follows it in many cases is an agent NP (e.g. J. Li 1955, L. Li 1980, C. Li & Thompson 1981, J. Zhang 1987, B. Zhang & Hu 1989). The treatment of *bei*, on a par with the preposition *by* in English, has been extensively employed in the work, for instance, of generative linguistics (e.g. Xu & Langendoen 1985, Xu 1986, J. Huang 1993). The advantage with this proposal is that the presence of the agent NP in *bei* sentences like (4.1a-b), repeated here as (4.6a-b), might receive a natural explanation under the preposition analysis if the predicate could be interpreted as passive.

(4.6) a. *Zhangsan bei Lisi da guo.*

Zhangsan by Lisi beat EXP

‘Zhangsan has been beaten by Lisi.’

b. *Zhangsan bei Lisi ma guo.*

Zhangsan by Lisi scold EXP

‘Zhangsan has been scolded by Lisi.’

However, verbs in Modern Chinese, as is pointed out in Chao (1968) and Lǚ (1982), do not show voice distinctions and thus do not exhibit passive meaning directly.

Moreover, there is a further disadvantage with this analysis in that the omission of the agent NP would result in the apparent stranding of a preposition, as in (4.2a-b), repeated here as (4.7a-b).

- (4.7) a. *fangzi bei chai le.*
house by demolish PFV
‘The house was demolished.’
- b. *chuanghu bei za le.*
window by smash PFV
‘The window was smashed.’

As is well-known, however, neither prepositions nor postpositions in Chinese are allowed to be stranded in any type of construction (cf. C. Li & Thompson 1981), as illustrated in (4.8)-(4.9).

- (4.8) a. *Zhangsan cong *(Beijing) lai.*
Zhangsan from Beijing come
‘Zhangsan comes from Beijing.’
- b. *Lisi zai *(Lundun) gongzuo.*
Lisi in London work
‘Lisi works in London.’
- (4.9) a. **(qiao) shang you yi-ke shu.*
bridge on have one-CL tree
‘There stands a tree on the bridge.’
- b. **(hai) li piao zhe henduo chuan.*
sea in float many boat
‘There float many boats in the sea.’

In view of this severe restriction on preposition and postposition stranding, some authors like Xu & Langendoen (1985) maintain that the morpheme *bei* in the agentless

pattern can be regarded as an exception. Accordingly, despite the absence of the agent NP in sentences like (4.10), they still treat *bei* as the counterpart of the English preposition *by*, although they refer to it as a particle.

(Xu & Langendoen 1985)

(4.10) *wo bei da le.*

1SG by beat PFV

'I was hit.'

As a language where prepositions can be stranded, even English does not allow the appearance of the preposition *by* when the agent is absent, as can be seen in the English translation of (4.10). One cannot help asking, how can a preposition behave so exceptionally in a language like Chinese where preposition stranding is prohibited? Furthermore, there are alternative ways in Chinese to form a sentence where *wo* 'I' still maintains the patient status (cf. H. Wang 1983), instead of employing a bizarrely stranded preposition. For example, we can use the verb *ai* 'get', which can take a nominalised verb or clause as its object.

(4.11) *wo ai le da.*

1SG get PFV beat

'I got a beating.'

These facts strongly suggest that it is questionable to class *bei* as a preposition, and equally force us to think the other way around. The data presented above naturally lead us to the hypothesis that *bei* as a marker of passives is unlikely to be agent-oriented and any parallels with agentive prepositions found in other languages are misconceived. Otherwise, we cannot afford a straightforward account of why *bei* sentences, agentive or non-agentive, are universally recognised as passive constructions by linguists of all persuasions. Therefore, it is reasonable to assume that it is more closely connected with the pre-*bei* position than the post-*bei* position.

Although it is true that the patient constituent can also be omitted under certain circumstances, its absence is significantly different from that of the agent constituent. Let us compare the following examples:

(4.12) a. *zhe jiahuo bei baba da guo duo ci, jiushi bu gai.*

this guy BEI dad beat EXP many times just not change

'This guy had been beaten many times by Dad, but he just didn't change.'

b. *bei da guo duo ci, zhe jiahuo jiushi bu gai.*

BEI beat EXP many times this guy just not change

'Had been beaten many times, this guy just didn't change.'

(4.12a) has two juxtaposed clauses one of which is a *bei* clause where both the patient and agent are present. The *bei* clause of (4.12b), which is adapted from (4.12a), has neither a patient nor an agent, but native speakers have no trouble at all figuring out the former, but not the latter without contextual clues. Clearly, the absence of the patient is syntactically motivated, because the *bei* clause and the other one share the same topic *zhe jiahuo* 'this guy'. Contrastively, the absence of the agent is pragmatically motivated, depending on context salience and information structure.

The significant difference concerning the allowable absence between the patient and agent evidently underlies the grammatical function of *bei*, which is in turn related to the grammatical status of the relevant construction. That is, the morpheme as marker of passives, is actually patient-oriented rather than agent-oriented. Given the severe restriction on preposition stranding, the preposition analysis is implausible.

4.2.2 The Dual Function Hypothesis

In view of the 'distributional' problem of *bei*, a few researchers like Lü et al. (1980) postulate that the word *bei* has a double function, namely, it is a preposition with the presence of the agent NP, but a helping particle with the absence of the agent NP. This analysis, as a matter of fact, implies that there are two *bei* morphemes in Chinese: one

functions as the trigger of the agent NP, the other functions as a passive morpheme which occurs immediately before the verb.³ Alternatively, Shi (1997) presents a two-morpheme hypothesis by modifying Lü et al's: the *bei* in passive constructions encodes two different morphemes, one preposition and one passive marker.⁴ Shi's postulation is intrinsically the same as Lü et al's except that it is more explicit than the latter.

Under the double function analysis, the problems arising from 'distribution' of *bei* disappear automatically, viz. the preposition *bei* could account for agentive cases like (4.1) because it is supposed to introduce an NP, whereas the helping particle *bei* could account for agentless cases like (4.2) because it is supposed to help the verb to get a passive voice. One crucial question that immediately arises from this proposal is, how could the same word *bei* behave so changeably in the same syntax of passive constructions?

We doubt the explanatory power of this sort of analysis, if we look at the hard fact that *bei* has invariably been placed in its own position, namely the post-patient position, no matter whether the agent NP is present or absent. For this reason, it is amply justified to say that the problematic morpheme is not a variable but an invariable item of the passive construction. What is employed as a variable is the agent NP whose absence or presence, as discussed in the preceding subsection, is pragmatically motivated and

³ In this regard, Lü et al's treatment of *bei* as a helping particle is very close to the inflection hypothesis made by Goodall (1992), who claims that *bei* should be treated as the realisation of the inflection feature Passive and its function is to mark a passive sentence, analogous to that of the English passive morpheme *-en*. Goodall's analysis is not discussed here since it is less popular than the three reviewed. Its lack of popularity, I suppose, is due to the impossibility of *bei* having an inflection feature, given the well-known fact that Chinese is not an inflectional language.

⁴ Shi (1997) attributes the so-called two *beis* to the phenomenon of haplology. His explanation is that, "every passive sentence is marked with the passive morpheme *bei*. If the agent NP is also present, it appears in an adjunct phrase headed by the preposition *bei*. When two *beis* occur in the same sentence, the second *bei* is deleted by the process of haplology" (p.49). This is apparently a special stipulation, given that the 'change' of *bei*'s status in 'different' positions has no syntactic motivation, which is pointed out by Hashimoto (1987) and admitted by Shi himself (p.46). Although Shi is opposed to any arbitrary or special stipulations concerning the analysis of *bei* constructions, he himself has unfortunately made one in his two-morpheme analysis.

hence is unrelated to the grammatical voice of the *bei* construction. On the contrary, it is the occurrence of *bei* that consistently marks the relevant sentences with an overtly passive flavour in an unambiguous way. Consider the following examples:

(Shi 1997)

(4.13) *laoshi jiao le toufa.*

teacher cut PFV hair

‘The teacher cut (someone’s) hair.’

‘The teacher, (someone) cut his hair.’

In Chinese, there are a considerable number of sentences like (4.13) which exhibit a great deal of ambiguity with regard to agenthood and patienthood. So they admit two possible interpretations, as illustrated by the English translations. But with the use of *bei*, the resulting sentences are unambiguously passives where the preverbal NP is unequivocally the recipient of the action, as in (4.14).

(4.14) *laoshi bei jiao le toufa.*

teacher BEI cut PFV hair

‘The teacher had his hair cut.’

Bei’s disambiguating capacity provides further convincing evidence for our argument made in subsection 4.2.1 that the morpheme marking passive sentences is more closely related to the patient rather than the agent. Specifically, *bei* consistently assigns the semantic role to the pre-*bei* argument by indicating that it is the recipient of action. This peculiar function of *bei*, so far as we are aware, has been seriously overlooked, although the word in question has been generally accepted as the marker of Chinese passives. If this argumentation is on the right track, *bei*’s grammatical function can provide a very natural explanation of the grammatical status of *bei* constructions of whatever patterns without any special stipulations: *bei* sentences are labelled as passives just because they contain a morpheme which always signals that the internal

argument is fronted, appearing before the marker and interpreted as being acted upon. The affectedness of the patient NP is thus highlighted in a marked manner: the NP preceding *bei* is in general interpreted as the passive recipient of a certain action just due to the presence of such a morpheme.⁵

Generally speaking, the morpheme *bei* can translate a sentence from active to passive by means of fronting the object before the subject, which makes passive constructions in Chinese share some similarities with topic constructions. The set of sentences in (4.15)-(4.16), which both involve object dislocation, should be treated as instances of topic constructions, with the former resulting from the omission of *bei* in the canonical agentive pattern (4.1), and the latter resulting from the omission of *bei* in the canonical non-agentive pattern (4.2).

(4.15) a. *Zhangsan Lisi da guo.*

Zhangsan Lisi beat EXP

‘Zhangsan, Lisi has once beaten.’

b. *Zhangsan Lisi ma guo.*

Zhangsan Lisi scold EXP

‘Zhangsan, Lisi has once scolded.’

(4.16) a. *fangzi chai le.*

house demolish PFV

‘The house, (someone) demolished.’

b. *chuanghu za le.*

window smash PFV

‘The window, (someone) smashed.’

As a matter of fact, there are a wealth of sentences in Chinese like those in (4.16),

⁵ Because its presence determines the grammatical voice of the whole sentence, *bei* cannot be left out together with the pre-*bei* patient argument when the latter is omitted in a proper context, as demonstrated in (4.12b).

where a patient NP is apparently fronted in the preverbal position. Although they appear to express a sort of passive meaning, sentences of this type are generally treated as topic sentences with the preverbal NP being construed as the topic (e.g. J. Huang 1982, C. Li & Thompson 1981, A. Li 1990, Shi 2000).⁶ This sheds more light on the function of *bei* constructions: the pre-*bei* patient argument dislocated in the sentence-initial position behaves like the topic of the sentence, whereas the post-*bei* clause serves as a ‘comment’ on it.

The above observation and discussion points to the conclusion that the so-called preposition *bei* and the helping particle *bei* are basically one and the same thing. That is, the word in question has only one single grammatical function, i.e. marking sentences with a passive flavour by giving the information that the pre-marker NP is acted upon in some manner specified by the verb. The one single function of *bei* can be confirmed by the hard fact that if speakers deliberately pause after *bei* is uttered in the course of conversation, hearers would consistently raise an event-oriented question about what happened to the preceding argument, and the answer to the question could either be an agentive or agentless one, as shown below.

(4.17) A: *Zhangsan bei* ...

B: *Zhangsan bei zenmo le* ?

Zhangsan BEI how SFP

C: *bei (Lisi) da le*.

BEI Lisi beat PFV

‘(He) was beaten (by Lisi).’

zenmo in the above question can be construed as ‘What happened (to Zhangsan)?’ or ‘How did someone dispose of (Zhangsan)?’, which has a strong disposal sense (cf. L.

⁶ Sentences of this type are not my concern, but they constitute evidence that Chinese passives are formed in such a way that in a sense a patient interpretation of the pre-*bei* constituent overlays a topic structure with the pre-marker NP functioning as the topic of *bei* sentences.

Wang 1959, C. Li & Thompson 1981, Lapolla 1989). Such an effect is not seen in dialogues involving a simple topic construction such as in (4.15) since the argument status of the initial noun phrase cannot be determined at this early point in the processing of the sentence, and the hearer cannot infer that Zhangsan is the object of the verb. These data show at least one thing: the morpheme clearly signals the function of the pre-*bei* constituent as object or patient. We have no choice but to take this evidence that the function of *bei* is not to identify the agent of an action. This is convincing proof that *bei*'s grammatical function is not associated with the presence or absence of the agent argument and there are no two instantiations of *bei*, as preposition and helping particle. There is one element whose single function is to mark sentences as passive by giving the information that the pre-*bei* NP is acted upon in some manner specified by the verb.

4.2.3 The Verb Hypothesis

In view of the inadequacy of the previous two analyses, a number of authors (e.g. Hashimoto 1968, 1987; Tan 1987, Ting 1998, J. Huang 1999) argue that the puzzling morpheme should be analysed as a verb, which historically it was, meaning 'receive' in Classical Chinese.⁷ This verb analysis is based on the assumption that *bei* as a special verb can take a predicate or clause as its complement. Accordingly, a passive sentence like (4.18a) has the underlying representation in (4.18b) (Hashimoto 1987: 41).

(4.18) a. *na-jian shiqing bei ta zhidao le.*

that-CL matter BEI 3SG know PFV

'That matter was known by him.'

⁷ It should be pointed out that although all the authors listed here treat *bei* as a verb, they take different approaches. Hashimoto takes the non-movement approach as presented here, while Tan adopts Lexical-Functional Grammar, and Ting and J. Huang the Government-Binding framework. Also it should be noted that some authors' analyses are inconsistent in their relevant work. For instance, J. Huang 1988 argues for the dual function analysis; J. Huang 1993 among other papers treats *bei* as a preposition on a par with the English preposition *by*; J. Huang 1999 is against the prepositional analysis and for the verb analysis of *bei* instead.

- b. [_S [_{NP} *na-jian shiqing*][_{VP} *bei* [_S [_{ta} [_{VP} [*zhidao le* [_{NP} *na-jian shiqing*]]]]]]]

Under the verb analysis, the Chinese passive construction, unlike its English counterpart, involves a complex sentence: what follows *bei*, according to Hashimoto, is a nominalised sentence with the object omitted. The omission of the object is attributable to the fact that it is identical to the subject, so undergoes deletion. As for the absence of the agent NP, it should be treated as a special case of null subject. Thus all the problems with the previous analyses could be given a satisfactory solution.

The treatment of *bei* as a special verb faces a number of serious problems, however. All the authors claim that the use of *bei* is compatible with some special transitive verbs like *ai*, *shou*, *zaoshou*, *jingshou*, etc., which all have the similar meaning, ‘receive’, ‘get’, ‘undergo’, ‘experience’, etc., and all are able to take a complement clause. If it is still used as a verb with the original lexical semantics, *bei* and the above-mentioned verbs are supposed to be exactly of the same type. Then one crucial question arises, why are only the constructions with *bei* interpreted as basic passives, not the constructions with these verbs?

More importantly, there is syntactic evidence against treating *bei* in the same way as these other verbs. For example, all these verbs can take an aspect marker as in (4.19a) and can also be used in the V-not-V form as in (4.19b), but *bei* cannot (cf. A. Li 1990 among others).

- (4.19) a. *Lisi ai/*bei le mama ma.*

Lisi get/BEI PFV mother scold

‘Lisi got a scolding of his mother.’

- b. *Lisi ai-mei-ai/*bei-mei-bei mama ma ?*

Lisi get-not-get/BEI-not-BEI mother scold

‘Did Lisi get a scolding of his mother?’

These facts suggest either that *bei* is not of the same type as those mentioned even if it is a verb, or that it is not a verb at all. That the latter is likely to be the case can be further evidenced by the comparison of *bei* with its variants *rang*, *jiao* and *gei* which are generally considered to function in the same fashion as *bei* in passive constructions. Although all the four morphemes can appear in agentive sentences like (4.20a), yet only *bei* can be used in agentless sentences like (4.20b). If the morpheme in question is not a verb in Modern Chinese these facts can be easily accounted for without recourse to the assumption that *bei* is a verb without common verbal properties.

(C. Li & Thompson 1981)

(4.20) a. *wo bei/gei/jiao/rang ta tou le lian kuai qian.*

1SG BEI/GEI/JIAO/RANG 3SG steal PFV two dollar money

'I had two dollars stolen by him/her.'

(Ibid)

b. *wo bei (*jiao/*rang/?*gei) tou le lian kuai qian.*

1SG BEI JIAO/RANG/GEI steal PFV two dollar money

'I was stolen two dollars.'

Semantically, the word *bei* has no lexical content at all, other than being a function word used to mark the passive construction, whereas its so-called variants all have a lexical content with independent meanings, besides being capable of marking the relevant constructions with a passive flavour: *rang*, *jiao* and *gei* may appear as full lexical verbs, meaning 'let or allow', 'tell, order' and 'give' respectively. Syntactically, the constructions containing these variants, as pointed out by C. Li & Thompson (1981), may have a different syntactic structure from the *bei* construction, which explains why sentences like the above unambiguously have a passive reading when marked by *bei*, but they probably have an ambiguous reading when marked by the other three words: so the *gei* sentence in (4.20a) could mean 'I stole two dollars for him', the *jiao* sentence 'I told him to steal two dollars', and the *rang* sentence 'I allowed him/her to steal two dollars'. The unacceptability of the non-agentive pattern

with these verbs in (4.20b) clearly reveals that their verbal properties still play a prominent role even in passive constructions because they normally take an NP as direct object.

The sharp contrast between the invariable behaviour of *bei* and the changeable behaviour of its variants provides supportive evidence that *bei* has been grammaticalised from a content word into a function word,⁸ while its variants *rang*, *jiao* and *gei* haven't.⁹ In the face of the above facts, it is sufficiently clear that the

⁸ The articulation of *bei* as a function word would certainly require another chapter. However, a brief introduction to *bei*'s grammaticalisation process should be of some help to the clarification of the issue under discussion. According to L. Wang (1989: 279), the appearance of *bei* constructions may be dated back to the end of the Warring Periods (475-221 B.C.), where *bei* is used as a verb meaning the same as those verbs like *zaoshou* and *mengshou* 'receive' and where there is no agent NP after the verb *bei*. This usage had lasted until the Han dynasty (206 B.C.-A.D. 220):

- (L. Wang 1989: 279)
(i) *jīn xióngdì bei qín.* (Hanfeizi)
now brother BEI attack

Around the end of the Han dynasty, *bei* constructions see the optional appearance of the agent NP which is placed after *bei* and before an objectless verb.

- (L. Wang 1989: 281)
(ii) *Liangzi bei Sū Jūn hāi.* (Shishuoxinyu)
Liangzi BEI Sū Jūn kill

In the Tang dynasty (A.D. 618-907), *bei* sentences see a new pattern, i.e. *bei* construction with a retained object, where an NP appears in the postverbal position and where the aspect marker *zhe* clearly proves that *bei* has lost its verbal properties, different from *ai* and *zaoshou* 'receive' which take a nominalised complement clause where the verb is disallowed to take any aspect markers.

- (L. Wang 1989: 282)
(iii) *nianzi bei wáng láng dào zhè chǒumáo.* (Chounuyuanqibianwen)
lady BEI Wang Master say DUR ugly face

In the Song (960-1279) and Yuan dynasty (1279-1368) following Tang, *bei* constructions see new developments in that the morpheme *bei* could appear in sentence-initial position, emphasising the adversity subsequent to the relevant action. This pattern, albeit very rarely used in Modern Chinese, provides convincing evidence that *bei* is not likely to be a preposition.

- (L. Wang 1989: 285)
(iv) *bei nǐ shā le sì-zhī lǎohu.* (Shuihuzhuan)
BEI you kill PFV four-CL tiger

The boldface in above examples shows that the post-*bei* constituent has been gradually enriched from a single verb to an objectless clause and finally to a complete clause. These facts have undoubtedly demonstrated that the word *bei* has gradually lost its lexical semantics and assumed the grammatical characteristics of a function word.

⁹ Although it seems outside the purview of this inquiry to seek an answer to a very interesting question as to why the sentences with these variants are also used and considered as passives, yet a few words

analysis of *bei* as a verb in Modern Chinese is untenable.

In summary, we can ascertain that none of the reviewed analyses provides a satisfactory account of *bei*. The fact that the passive morphology can appear before either a noun phrase or a verb phrase indicates that it is not a preposition. The differences in the omission of agent and patient arguments indicate that the morpheme is patient-oriented rather than agent-oriented. The differences in syntactic and semantic behaviour between *bei* and other 'passive' expressions further indicate that the expression is not a verb. I thus conclude that *bei* is a grammatical marker that induces passive interpretation by virtue of identifying the constituent before it as the patient argument of the verb.

4.3 Preliminary analysis

I shall in this section provide a preliminary analysis of the canonical patterns of *bei* constructions, which is to be taken as a template for treating the problematic patterns. Based on the observations and discussion presented in section 4.2, I argue that *bei* as a function word is actually a voice marker whose fundamental function is to indicate that the action proceeds in an inverse direction. Because of this lexical effect, the preceding argument is naturally assigned a patient role by *bei* and hence becomes the passive recipient of the action.¹⁰ It is this very patienthood-assigning grammatical function that has prompted linguists to uncontroversially accept it as the

should be useful to help understand the nature of *bei* constructions. The interpretation of the *rang*, *jiao* and *gei* sentences as passives, I suppose, is essentially a pragmatic matter. Intuitively, sentences like (4.20a) appear to emphasise the point that the patient is not good enough (e.g. careful, clever, etc.) to become a victim or passive recipient of the stealing event, since s/he does give the thief a chance to steal his or her money, albeit not on his or her own initiative.

¹⁰ After I finished the draft of this chapter, I happened to read the analysis of LaPolla (1989) who argues that *bei* is a patient-focus disposal marker. This treatment cannot explain why a patient marker is not left out together when the marked patient is omitted, as shown in (4.12b), so it is more reasonable to analyse it as a voice particle with a special grammatical function, since it really determines the grammatical voice of the sentence, as mentioned in footnote 5. The advantage of treating *bei* as a voice marker rather than just a patient-focus marker is quite obvious: as will be shown later in the tree displays, the trigger for this passive morpheme is invariably a *Ty(t)*, which is in accordance with the fact that it is responsible for the grammatical voice of the whole sentence.

morphological marker of passive constructions in Chinese.¹¹ In terms of parts of speech, we may call *bei* a voice particle, because it has the defining properties of a particle generalised by Crystal (2001:279-280), ‘a term used in grammatical description to refer to an invariable item with grammatical function, especially one which does not readily fit into a standard classification of parts of speech.’

4.3.1 Pragmatic voice

The grammatical function of *bei* in inducing dislocation of a recipient expression can best explain why *bei* sentences are considered as passives in Chinese, since the use of this morphology has the effect of highlighting the semantic aspect of the affectedness inherent in the dislocated patient (cf. Shibatani 1985). Consider the following example:

- (4.21) a. *jingcha kanjian le Zhangsan.*
 police see PFV Zhangsan
 ‘The policeman saw Zhangsan.’
 b. *Zhangsan bei jingcha kanjian le.*
 Zhangsan BEI police see PFV
 ‘Zhangsan was seen by the policeman.’

The active sentence (4.21a) simply describes a seeing event in which the affectedness of the patient is not salient at all, but with the use of *bei*, the patient has to be fronted to sentence-initial position which marks the entity as the most prominent argument of the verb. In other words, the syntactic prominence resulting from displacement makes the argument the focus of attention. Since it is marked by the voice particle *bei* which always signals the message ‘attention, please, what precedes me is what has been acted

¹¹ My treatment of *bei* as a voice particle which consistently assigns the patient role to the pre-*bei* NP and highlights its affectedness, I think, is diachronically justified as far as the original function of *bei* as a verb is considered. As is illustrated in footnote 8, when originally used as a verb, *bei* constructions always see the occurrence of an NP with a patient status in the pre-*bei* position, but not an agent NP in the post-*bei* position. It is about 400 years later that *bei* constructions see the optional occurrence of an agent NP.

upon', the affectedness of the fronted argument naturally becomes food for thought, which potentially gives rise to a pejorative meaning as it emphasises the passivity of the patient of the action. (4.21b), for instance, implies the adverse situation *Zhangsan* faced subsequent to the seeing event, i.e. consequently he might be suspected of doing something bad or might be questioned later. The adverse implication of *bei* sentences is reached via a relevance-based interpretation (Sperber and Wilson 1995), which is bolstered by the remnant of the semantics of the verb *bei* once was: the subject of such a verb being the recipient, a non-agentive role.

The above typical example shows that the pre-*bei* argument has assumed a status of pragmatic salience due to the existence of *bei*.¹² Precisely, *bei* changes the voice of a sentence from active to passive by means of assigning not only a semantic role but also a marked pragmatic status to the pre-*bei* NP, without altering the morphosyntactic or semantic relations between the verb and its arguments. Having had a clear picture of *bei*'s function, we are supposed to have a natural understanding of why sentences with *bei* are called passive constructions, because they have a voice which encodes action notionally devolving from the standpoint of the patient of a transitive verb (cf. Klaiman 1991). This voice is undoubtedly passive, because the verbs occurring in *bei* sentences, in the words of Lyons (1968: 372), are characterised by "signifying the state of 'being acted upon' or 'suffering the effects of the action'", as can be attested by the fact that they either take a perfective aspect marker *le* or an experiential aspect marker *guo*.

From a typological perspective, the passive voice behaviour in Chinese may be ascribed to Pragmatic Voice, because it is pragmatically grounded to a large extent, given that *bei* sentences generally express a sense of adversity and highlights the

¹² It is worthwhile to mention the fact that although traditionally *bei* constructions generally have a pejorative implication, a very small number of *bei* sentences in Modern Chinese, as discussed in C. Li & Thompson (1981: 496-497), are more or less free of such pragmatic commitments due to the influence of translation from Indo-European languages to the Chinese language.

affectedness of the dislocated patient argument. This is actually the terminology of Klaiman (1991) who, on the basis of a cross-linguistic survey, introduces a threefold classification of voice types: derived voice (passivisation phenomena), basic voice (active-middle systems) and pragmatic voice. According to Klaiman, pragmatic voice as a distinct type is manifested by voice alternations signaling the variable assignment to sentential arguments of some special pragmatic status or salience. Let us consider the following example quoted by Klaiman (1991: 34) from Ayres.

(4.22) a. A- *k'oni in* *ta'n uula.*

2SG ERG shoot 1SG ABS with sling

'You shot me with a sling.'

b. *Uula a-* *k'oni -b'e in.*

sling 2SG ERG shoot index 1SG ABS

'With a sling you shot me.'

In the (a) sentence, an oblique nominal appears sentence-finally, whereas in the (b) sentence, this argument, stripped of the preposition, is fronted in sentence-initial position. The suffix *-b'e* is an index of instrumental focus which means that the oblique-instrumental argument is the locus of informational salience in the sentence. As for Chinese, its passive voice by and large behaves in a similar fashion to that of the above Mayan language.

(L. Li 1980)

(4.23) a. *ta yong na-kuai bu zuo le yi-tiao kuzi.*

3SG with that-CL cloth make PFV one-CL trousers

'He made a pair of trousers with the cloth.'

(Ibid)

b. *na-kuai bu bei ta zuo le yi-tiao kuzi.*

that-CL cloth BEI 3SG make PFV one-CL trousers

'The cloth was made into a pair of trousers by him.'

As with the Mayan example in (4.22a), (4.23a) has an oblique nominal in sentence-final position, whereas in (4.23b), the nominal stripped of the preposition is fronted in sentence-initial position. Just like the suffix *-b'e*'s assignment of informational salience to the oblique-instrumental argument, *bei* signals the assignment of pragmatic salience to the pre-*bei* argument, i.e. the cloth has been used, possibly in an improper way.

By comparison, the voice behaviours in Chinese and the Mayan language share at least two characteristics: (i) the voice change from active to passive entails no alternation in morphosyntactic relations between the verb and its nominals; (ii) the voice change from active to passive involves “the assignment to sentential arguments of some salience whose basis is in the situation of speaking, or pragmatic salience” (Klaiman 1991:35).

4.3.2 Left dislocation

From the functional perspective, as we have briefly discussed in section 4.2, *bei* constructions share certain points of similarity with topic constructions, which has also been noticed in Hashimoto (1968), Lapolla (1989) and Y. Huang (2000) and others. Compare *bei* sentences (4.1a-b), repeated here as the (a) sentences of (4.24)-(4.25) with their *bei*-less counterparts, the (b) sentences of (4.24)-(4.25).

(4.24) a. *Zhangsan bei Lisi da guo.*

Zhangsan BEI Lisi beat EXP

‘Zhangsan has been beaten by Lisi.’

b. *Zhangsan Lisi da guo.*

Zhangsan Lisi beat EXP

‘Zhangsan, Lisi has beaten.’

(4.25) a. *Zhangsan bei Lisi ma guo.*

Zhangsan BEI Lisi scold EXP

‘Zhangsan has been scolded by Lisi.’

- b. *Zhangsan Lisi ma guo.*

Zhangsan Lisi scold EXP

‘Zhangsan, Lisi has scolded.’

The similarity between the (a) sentence and the (b) sentence is striking: (i) syntactically, the constituent *Zhangsan*, whether in *bei* constructions or topic constructions, is left-dislocated in sentence-initial position; (ii) semantically, *bei* sentences are truth-conditionally the same as topic sentences. This generalisation turns out to be correct even if we look at more data such as the most problematic pattern.¹³

- (4.26) a. *men shang bei haizimen wa le yi-ge dong.*

door on BEI children dig PFV one-CL hole

Lit. ‘On the door was dug-a-hole by the children.’

- b. *men shang, haizimen wa le yi-ge dong.*

door on children dig PFV one-CL hole

‘On the door, the children dug a hole.’

- c. *haizimen zai men shang wa le yi-ge dong.*

children LOC door on dig PFV one-CL hole

‘The children dug a hole on the door.’

- d. *haizimen ba men shang wa le yi-ge dong.*

children BA door on dig PFV one-CL hole

‘The children dug a hole on the door.’

- (4.27) a. *hu li bei cunminmen yang le henduo eyu.*

lake in BEI villagers raise PFV many crocodile

Lit. ‘In the lake was raised-many-crocodiles by the villagers.’

- b. *hu li, cunminmen yang le henduo eyu.*

¹³ The word *zai* in the (c) sentences is a marker of the prepositional phrase, and *shang* ‘on’ specifies the location of the hole and *li* ‘in’ the location of the crocodile.

lake in villagers raise PFV many crocodile

‘In the lake, the villagers raised a lot of crocodiles.’

c. *cunminmen zai hu li yang le henduo eyu.*

villagers LOC lake in raise PFV many crocodile

‘The villagers raised a lot of crocodiles in the lake.’

d. *cunminmen ba hu li yang le henduo eyu.*

villagers BA lake in raise PFV many crocodile

‘The villagers raised a lot of crocodiles in the lake.’

The (a) sentences are *bei* sentences with a locative phrase occurring before the voice marker and functioning as the topic of the sentence while the (b) sentences, resulting from the omission of *bei*, are clearly topic sentences with the locative phrase serving as the topic.¹⁴ These two types of sentences still have in common the above-mentioned syntactic and semantic attributes. Compared with the canonical sentences in (4.26, 4.27c-d) one of which is a *ba*-sentence, both the passive sentences in (4.26, 4.27a) and topic sentences in (4.26, 4.27b) can be treated as a species of left dislocation structure.

As far as grammatical status is concerned, it is not the pre-*bei* NP but the post-*bei* NP that is the subject of the sentence, with respect to the universal subject property generalised by Keenan (1976:321) that ‘b(asic)-subjects normally express the agent of the action, if there is one’. Structurally, what precedes *bei* functions as the topic of the sentence and what follows *bei* serves as a ‘comment’ clause providing some information about what happens to the sentence-initial patient, although the flow of articulation needn’t be cut off after the voice particle (cf. Hashimoto 1968, Lapolla 1989).¹⁵ As a matter of fact, the functional similarity of passivisation with

¹⁴ This is compatible with the Chinese fact that PP as well as NP in both A and A’ positions can appear in the topic position (cf. Xu & Langendoen 1985).

¹⁵ Hashimoto (1968) has referred to the pre-*bei* NP as a topic expression, and Lapolla (1989) has further provided very insightful discussions about the topic nature of the pre-*bei* NP and similarities and differences between topicalisation and passivisation in Chinese, though they didn’t go beyond this point to explain the typological nature of the voice behaviour in Chinese. In addition, the treatment of the

topicalisation has already been discussed by a number of linguists like Givón (1979: 186), who defines passivisation as ‘the process by which a non-agent is promoted into the role of a main topic of the sentence’, and Roberts (1998: 112) who claims that ‘passivisation can be regarded as one way of making a functional topic more prominent syntactically’. We can therefore make a claim that passive in Chinese involves the promotion of the patient NP not to the subject but to (unique) topic and it is the morpheme *bei* that induces its dislocation to the topic position.

Nevertheless, we should be fully aware that there still exist some crucial differences both in syntax and semantics between ‘passivisation’ and topicalisation in Chinese, which precludes the possible conclusion that they should be regarded as entirely the same. Semantically, *bei* sentences as passives generally express a pejorative implication, emphasising the adverse situation subsequent to the relevant action and the affectedness of the pre-*bei* patient argument.¹⁶ Syntactically, what is passivised can

pre-*bei* patient argument as topic and the post-*bei* agent argument as subject involves another well-discussed issue, i.e. the distinction between topichood and subjecthood. Readers are referred to C. Li (1976) and C. Li & Thompson (1981) for a detailed discussion.

¹⁶ It is important to point out that the use of topic structure and passive structure in Chinese is very subtle due to the similarity between them. Consider the following example:

(J. Huang 1999)

- (i) *neifeng xin bei wo jiao Lisi qing Wangwu tuo ta meimei jizou le.*
 that letter BEI 1SG tell Lisi ask Wangwu request 3SG sister send PFV
 ‘That letter was told-Lisi-to-ask-Wangwu-get-his-sister-to send by me.’

At a first glance, sentences like the above are seemingly not so bad although they are rarely used by native speakers in everyday conversation. But under a careful scrutiny, the formation of such sentences is highly doubtful. Firstly, J. Huang argues for a verb analysis and treats *bei* as a verb which has the same meaning as verbs such as *ai* ‘get’, *shou* ‘receive’, *jingshou* ‘experience’, *zaoshou* ‘undergo’, etc., as mentioned in section 4.2 and admitted by the author himself. It should be borne in mind that in Chinese none of these verbs allows the syntactic structure of the above example, i.e. a serial verb construction involving four verbs (cf. A. Li 1990:201 for a discussion). Secondly, it should also be borne in mind that the crucial difference between topicalisation and passivisation in Chinese, as agreed among linguists including the author himself, is that apart from the topical effect of the pre-marker NP, the latter in general conveys a sense of adversity and highlights the affectedness of the fronted patient. Yet in the above example there is apparently a lack of affectedness of the pre-*bei* NP: from the perspective of the speaker (*wo* ‘I’ here), in what sense is the letter (adversely or positively) affected by a justified sending action which involves so many helpers? Rather, native speakers would express the same idea by using a topic structure, i.e. deleting *bei*, as below:

- (ii) *neifeng xin wo jiao Lisi qing Wangwu tuo ta meimei jizou le.*
 that-CL letter 1SG tell Lisi ask Wangwu request 3SG sister send PFV
 ‘That letter, I told Lisi to ask Wangwu get his sister to send (it).’

only be the patient argument of a transitive verb, whereas what is topicalised is not subject to this constraint, as illustrated in (4.28a)-(4.29a) which are transformed from the active counterparts of (4.28b)-(4.29b) respectively.

(4.28) a. **Lisi bei da guo Zhangsan.*

Lisi BEI beat EXP Zhangsan

b. *Lisi ta/zhe jiahua da guo Zhangsan.*

Lisi 3SG/this guy beat EXP Zhangsan

‘Lisi, he/this guy has beaten Zhangsan.’

(4.29) a. **Lisi bei ma guo Zhangsan.*

Lisi BEI scold EXP Zhangsan

b. *Lisi ta/zhe jiahua ma guo Zhangsan.*

Lisi 3SG/this guy scold EXP Zhangsan

‘Lisi, he/this guy has scolded Zhangsan.’

The ungrammaticality of the (a) sentences contrasts sharply with the grammaticality of the (b) sentences. The former can be accounted for by the fact that *Lisi* as the agent cannot occur before *bei* since only the patient is licensed to do so, whereas the latter can be attributed to the fact that NPs in any argument position are in general allowed to be topicalised in Chinese.

To sum up, I claim that *bei* is a functional element that gives rise to a form of pragmatic passive construction in Chinese. The puzzling morpheme induces the left dislocation of a patient expression into the prominent topic position, thus highlighting its affectedness by the verb, and further signals the message that this expression is the goal of the action. In the next subsection, I shall provide an analysis within the DS

This is a typical example of the indiscriminate use of ‘passivisation’ and topicalisation, which is probably caused by the similarity between them (e.g. the pre-*bei* NP functions as the topic as well as assuming the patient role of the predicate or complex predicate). Of course, it is very reasonable to assume that the fact that *bei* sentences normally do not appear in a serial verb construction involving multiple verbs is diachronically related to the original function of *bei* as a verb meaning ‘receive’.

framework.

4.3.3 The formalisation of the canonical patterns

Having spelled out the grammatical characteristics of the *bei* construction, let us now turn to its representation and interpretation. Given that the pre-*bei* constituent is a left-dislocated expression, it is therefore natural to analyse this constituent in terms of an initially unfixed node, with an entirely open dominance relation to the top node as with the topicalised focus in topic constructions dealt with in Chapter 3.¹⁷ Parsing the voice marker *bei* then identifies this initially unfixed node as the internal argument of the main verb. In other words, *bei* restricts the location of the node associated with the dislocated pre-*bei* expression in a quite precise fashion, even though it remains strictly unfixed at this point of the parse. This is achieved by imposing a further two requirements on the unfixed node.

The first requirement is that at some stage in the parsing process, the node has a predicate node as mother as formalised as $\langle \uparrow_0 \rangle \text{Ty}(e \rightarrow t)$, which reads ‘I must be the argument daughter of a predicate node.’ The second restriction has to do with the fact that the node must be identified as the argument daughter of a highest predicate node. This is because the *bei* construction in general does not allow long distance extraction as illustrated in (4.30):

(4.30) a. **Zhangsan bei Lisi zhidao Wangwu da guo.*

Zhangsan BEI Lisi know Wangwu beat EXP

b. *Zhangsan Lisi zhidao Wangwu da guo.*

Zhangsan Lisi know Wangwu beat EXP

‘Zhangsan, Lisi knows that Wangwu has beaten.’

¹⁷ The pre-*bei* constituent functions in the same fashion as the topicalised focus discussed in the preceding chapter. For simplicity, I generally refer to it as a topic expression though there are still some differences between the pure topic which is a given term and the *bei*-marked element which is an update term.

This further locality requirement can be represented through the complex modality $\langle \uparrow_0 \rangle \langle \uparrow^1_* \rangle \text{Tn}(a)$, which requires the current node to be the argument daughter of some node that is dominated by $\text{Tn}(a)$ solely through functor nodes.¹⁸

To illustrate the working mechanism underlying the interpretation of *bei* constructions, let us first tackle the canonical agentive pattern, with (4.1a) *Zhangsan bei Lisi da guo* as an example. The first step is to create an initial tree the root node of which is annotated with a formula of type t , as is universal in all parse representations. What follows is to utilise the rule of *Adjunction for introducing the unfixed node which allows the parse of the left-peripheral expression *Zhangsan*.

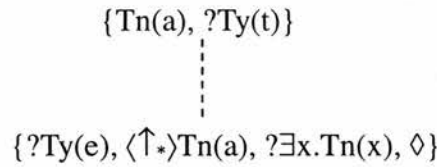


Figure 4.1: Introducing the unfixed node

The second step is the parse of the pre-*bei* argument *Zhangsan*, the processing of which updates the decoration of the unfixed node with a formula value $Fo(\text{Zhangsan})$, since it fulfils the requirement for an expression of type e :

¹⁸ One counterexample to the stipulation of the locality requirement is that marginally *bei* sentences have a serial verb construction like the following.

- (iii) *Zhangsan bei Lisi kai qiang da si le.*
Zhangsan BEI Lisi open gun shoot dead PFV
'Zhangsan was shot dead by Lisi.'
- (iv) *Zhangsan bei Lisi fang huo shao si le.*
Zhangsan BEI Lisi set fire burn dead PFV
'Zhangsan was burned to death by (the fire set) Lisi.'

This type of sentences do not pose a serious problem, since the conjoined verbs *kai-qiang-da-si* 'shoot dead' and *fang-huo-shao-si* 'burn to death' can be treated as a idiom-like complex predicate where the object *qiang* 'gun' and *huo* 'fire' are incorporated nouns which can neither be topicalised or passivised (see A. Li 1990). For simplicity, the locality constraint will be suppressed in the tree descriptions.

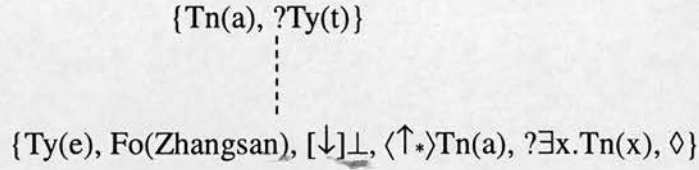


Figure 4.2: Parsing *Zhangsan*

Note here that the node where the pointer sits is still underspecified with respect to its position in the tree. Having parsed *Zhangsan*, the pointer now moves back to the root node of the tree and the voice particle *bei* is then scanned, giving rise to the lexical actions in (4.31) where the trigger is a $Ty(t)$, following from the fact that it determines the grammatical voice of the whole sentence:

(4.31) Lexical entry for *bei*

```

IF      (?Ty(t)  $\wedge$  Tn(a))
THEN    IF       $\langle \downarrow^* \rangle (Ty(e) \wedge Fo(\alpha))$ 
        THEN    go( $\langle \downarrow^* \rangle Ty(e)$ ); put( $\langle \uparrow_0 \rangle Ty(e \rightarrow t)$ ,  $\langle \uparrow_0 \rangle \langle \uparrow^* \rangle Tn(a)$ );
            go( $\langle \uparrow^* \rangle ?Ty(t)$ )
        ELSE    ABORT
    ELSE    ABORT

```

Since *bei* provides the information about the specific location of the unfixed node, the third step is further updating its description by adding a specifically positional requirement which secures a place in the tree for the unfixed node:

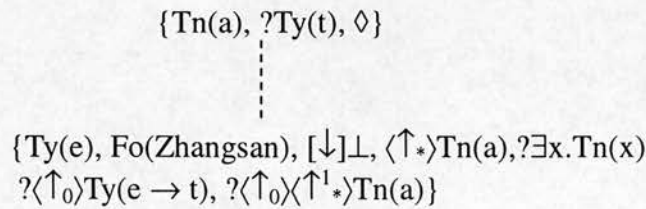


Figure 4.3: Parsing *Zhangsan bei*

After the processing of the voice marker, the parse proceeds as before with nodes for subject and predicate being introduced, allowing the parse of the agent *Lisi* and the verb which projects an unfixed n-place predicate node. Then as we have seen before, the predicate node is unfolded as two further subgoals: to find the content of an internal argument and a two-place predicate.

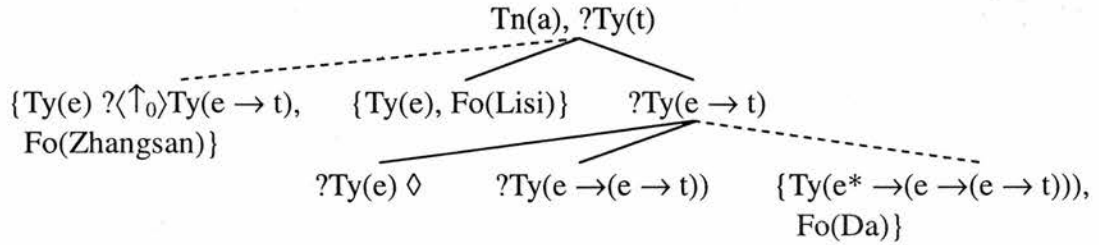


Figure 4.4: Parsing *Zhangsan bei Lisi da guo*

The above figure is in fact the general characterisation of the structural properties of *bei* constructions: the pre-*bei* constituent projects an unfixed node of $Ty(e)$ linked to a tree with a propositional requirement, plus a specifically positional requirement, $?(↑₀)Ty(e → t)$, $?(↑₀)(↑¹*)Tn(a)$, which indicates that it is the dislocated argument of the predicate. This provides a template for analysing various patterns of *bei* constructions: a left-peripheral argument, characteristically signalled by the voice marker *bei*, will eventually merge with the argument daughter of the one-place predicate to derive a well-formed propositional formula.

Subsequent to the parse of the verb, as shown in figure 4.4, the pointer first moves to the argument node, which provides the context in which the merge of the pre-*bei* expression takes place, as shown in figure 4.5.

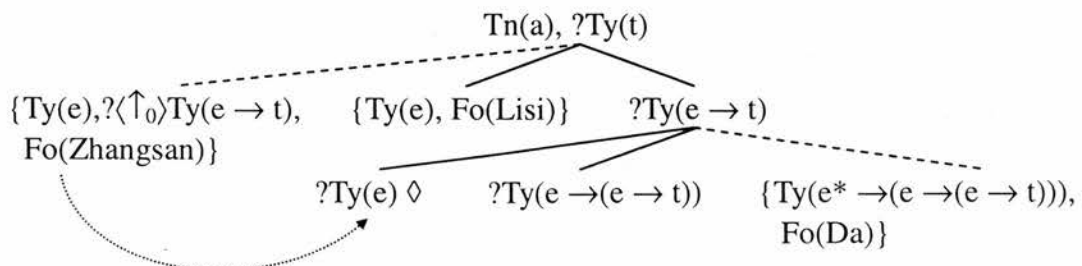


Figure 4.5: Merge of the unfixed argument node

Then the pointer moves to the open two-place predicate node. If there is more lexical input like *duo ci* ‘many times’ as in the utterance *Zhangsan bei Lisi da guo duo ci*, the open predicate node would be unfolded again as two further subgoals. In the case of (4.1a), merge of the unfixed predicate node takes place, as shown in figure 4.6 where the tree will be completed to yield a full propositional formula, $Da(Zhangsan)(Lisi)$.

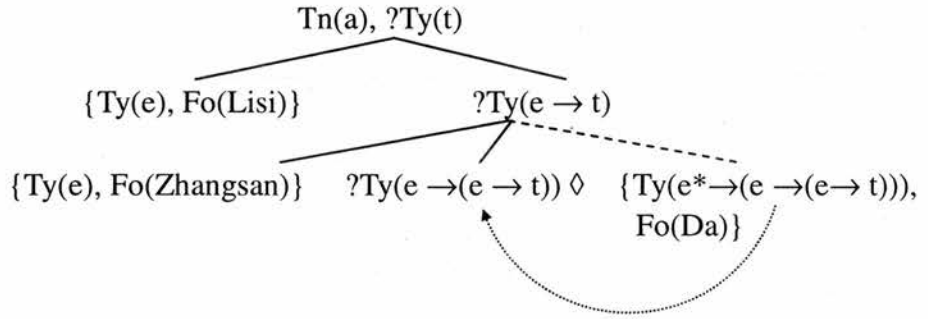


Figure 4.6: Merge of the unfixed predicate node

As for the agentless pattern, it is straightforwardly analysable. The lack of the agent can be treated as a simple instance of pro-drop as in some generative account (e.g. Ting 1998). Thus in parsing (4.2a) *fangzi bei chai le* ‘the house was demolished’, after the first two words have been parsed, the pro-drop rule formulated in Chapter 2 can be applied to induce a metavariable to satisfy the type-requirement, as shown in figure 4.7.

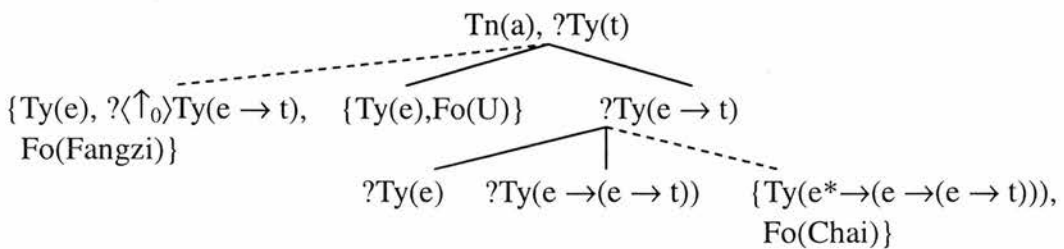


Figure 4.7: Parsing *fangzi bei chai le*

The metavariable can be replaced by some term in context, either a salient substitute or

some arbitrary term standing for 'someone'. In favour of this analysis is the fact that after an utterance like (4.2a), repeated here as an agent-oriented question is felicitous.

(4.32) a. *fangzi bei chai le.*

house BEI demolish PFV

'The house was demolished.'

b. *bei shui chai le ?*

BEI who demolish PFV

'By whom was (the house) smashed?'

Also in spoken discourse, native speakers prefer to use a generic NP like *ren* 'people' in the post-*bei* position instead of a null agent if the agent is unknown to them or unnecessary to specify, as shown in (4.33).¹⁹

(4.33) a. *fangzi bei ren chai le.*

house BEI people demolish PFV

'The house was demolished by someone.'

b. *chuanghu bei ren za le.*

window BEI people smash PFV

'The window was smashed by someone.'

These data imply that the non-agentive pattern has some pragmatic attachments in the sense that the agent, albeit absent in the syntax, might be pragmatically 'present' in the mind of the hearer.²⁰

¹⁹ One conceivable problem comes from a few fixed expressions like *bei-bu* (BEI arrest) and *bei-po* (BEI force) which involve two bound morphemes, it would become unnatural if an agent NP like *ren* is inserted between the two components, as in **bei ren pu* and **bei ren po*, because the verbal morphemes are from Archaic Chinese where monosyllabic words are used independently (cf. Packard 1998). In Modern Chinese, native speakers have to say *daipu* 'arrest' and *qiangpo* 'force'. These limited expressions are taken as exceptions and treated as lexical compound passives by Ting (1998) among other authors.

²⁰ The author queried nine Chinese-speaking children of ages 6-10 with regard to the interpretation of the agentless *bei* sentences. Interestingly, seven of them insist that such sentences are rather bad because the agent is missing.

In this dynamic analysis, I have provided a characterisation of the *bei* construction that not only captures its relationship with topic constructions but also shows how the passive reading is induced by the explicit encoding that the pre-*bei* expression must be interpreted as the internal argument of the verb, hence the interpretation of the construction as a passive. As has been shown above, such an analysis directly accounts for both agentive and agentless patterns without further stipulation and without assumption that the morpheme *bei* has more than one single function. To consolidate this analysis, I shall now explore whether it can extend to the problematic patterns discussed in section 4.1.

4.4 Problematic patterns

With the successful characterisation of the canonical patterns, we now are in a position to deal with the problematic patterns. As introduced in section 4.1, there are three problematic patterns with the *bei* construction, all of which effectively involve the ‘retention’ of an object, something that should not be permissible if in fact, the voice marker identifies an initial expression as the internal argument of the main verb.

4.4.1 *Bei* construction with a retained object (BCRO)

4.4.1.1 *The syntax of BCRO*

One of the interesting structural properties of *bei* constructions is that in many cases, when the pre-*bei* NP has already occupied the left-peripheral position, another NP can occur in the right-peripheral position as shown in the problematic *bei* sentences like (4.3), repeated here as (4.34).

(4.34) a. *Zhangsan bei Lisi daduan le tui.*

Zhangsan BEI Lisi break PFV leg

‘Zhangsan’s leg was broken by Lisi.’

b. *Zhangsan bei Lisi jian le toufa.*

Zhangsan BEI Lisi cut PFV hair

‘Zhangsan’s hair was cut by Lisi.’

In some analyses within traditional and generative grammars, the pre-*bei* NP is termed the ‘moved object’ and the NP in the object position the ‘retained object’. For convenience of discussion, I maintain this terminology despite the differences in analysis, and accordingly refer to this pattern as the *bei* construction with a retained object (henceforth BCRO).

Although there appear to be two objects in these examples, their status is intuitively quite different. Apparently, what is being talked about in this pattern is the moved object like *Zhangsan* in both (4.34a) and (4.34b), not the retained object like *tui* ‘leg’ in (4.34a) or *toufa* ‘hair’ in (4.34b). This can be confirmed under some discourse circumstances as in (4.35), which contains two juxtaposed clauses where the pronominal in the second one is anaphorically coreferential to the pre-*bei* NP *Zhangsan* in the preceding one.

(4.35) a. *Zhangsan bei Lisi daduan le tui, (ta) bu neng shangban.*

Zhangsan BEI Lisi break PFV leg 3SG not could go to work

‘Zhangsan’s leg was broken by Lisi and he couldn’t go to work.’

b. *Zhangsan bei Lisi jian le toufa, (ta) kanqilai hen jingshen.*

Zhangsan BEI Lisi cut PFV hair 3SG look very smart

‘Zhangsan’s hair was cut by Lisi and he /*it looked very smart.’

If the speaker wants to talk about the entity represented by the retained object, s/he would have to produce utterances like (4.36), the canonical pattern of *bei* constructions where the so-called retained object is fronted and the moved object is made into a nominal modifier.

(4.36) a. *Zhangsan de tui bei Lisi daduan le.*

Zhangsan 's leg BEI Lisi break PFV

'Zhangsan's leg was broken by Lisi.'

b. *Zhangsan de toufa bei Lisi jian le.*

Zhangsan 's hair BEI Lisi cut PFV

'Zhangsan's hair was cut by Lisi.'

In terms of the discourse function, there obviously exists a crucial difference between (4.35), a BCRO pattern where the topic is certainly the moved object *Zhangsan*, and (4.36), a canonical pattern where the topic has obviously shifted to Zhangsan's leg or hair. This fact forces us to rethink the English translations for sentences like (4.34) because strictly speaking, they are only pragmatic inferences drawn from the interpretation of the original utterances. To illustrate this point, let us consider one more example:

(4.37) a. *Zhangsan bei Lisi ma le niang, ta feichang qifei.*

Zhangsan BEI Lisi curse PFV mother 3SG very furious

'Zhangsan was cursed-mother by Lisi. He/*She was very furious.'

b. *Zhangsan de niang bei Lisi ma le, ta feichang qifei.*

Zhangsan 's mother BEI Lisi curse PFV 3SG very furious

'Zhangsan mother was cursed by Lisi. He/She was very furious.'

(4.37a) also contains two juxtaposed clauses where the pronominal in the second one should be anaphorically coreferential either to the pre-*bei* NP *Zhangsan* or the object NP *niang* in the preceding one if the latter is referential, given the fact that in speech third-person pronouns in Chinese do not make a difference between masculine and feminine. But the construal of the pronoun *ta* as referring to a female is absolutely unacceptable in the context. Direct to the anaphoric reference to the entity denoted by the retained object *niang* is only possible if the problematic pattern is translated into a canonical one as in (4.37b).

This convincingly proves that interpretively, *niang* ‘mother’ in (4.37a) does not refer to any particular mother but a class of female parents, which can also be supported by the fact that the pre-*bei* argument *Zhangsan* can be freely replaced by any noun phrase with the semantic feature [+Human]. If, for instance, (4.37a) is translated into English as ‘Zhangsan’s mother was cursed by Lisi’, it is not merely far from equivalent but also possibly misleading, for the reason that the translation implies that Zhangsan’s mother was the real victim of the relevant event. On the contrary, it is the pre-*bei* NP *Zhangsan* that is the real victim of the mother-cursing event. As for the victim’s mother, her affectedness is purely speculative. This point will become clearer if we create a scenario in which Lisi shouts abuse at Zhangsan like ‘son of a bitch!’.

As regards the translation of this problematic pattern, there seems no better way to find an equivalent pattern in English than give an explanation by paraphrase as shown above.²¹ The problem with the translation of (4.34) at least shows that *bei* constructions of this type to a large extent allow a pragmatically ‘transparent’ interpretation, which apparently arises from the special relationship between the retained object and the moved object, as will be discussed later in subsection 4.4.1.4.

4.4.1.2 The semantics of the retained object

On closer examination, we find that the properties of the retained object in sentences like (4.34), viz. the lack of anaphoric reference and the inability to act as topic of the sentence, are all properties that have been shown to hold of incorporated internal

²¹ One may propose that sentences like (4.34) can be translated into English by using the *have...done* construction, as employed in the literature.

- (i) *Zhangsan bei Lisi daduan le tui.*
Zhangsan BEI Lisi break PFV leg
‘Zhangsan had his leg broken by Lisi.’
- (ii) *Zhangsan bei Lisi jian le toufa.*
Zhangsan BEI Lisi cut PFV hair
‘Zhangsan had his hair cut by Lisi.’

If the translations in (i)-(ii) has the advantage in that they keep the pre-marker NP as the topic (in the general sense), the translations in this chapter have the advantage in that they maintain the voice of the original sentence. Comparatively, it is more important to be equivalent to the grammatical voice of the original.

arguments in the sense of Zubizarreta (1987), or in the words of Baker (1988:1), “one semantically independent word coming to be ‘inside’ another”. In other words, the verb and the retained object NP combines into a complex verb which itself has an internal argument, the pre-*bei* constituent. The lack of anaphoric potential for the retained objects is further reflected in the fact that such an expression cannot be overtly referential. This is shown in the impossibility of modifying it with a demonstrative like *zhe* ‘this’ or *na* ‘that’ as in (4.38) below.

(4.38) a. **Zhangsan bei Lisi daduan le zhe/na-tiao tui.*

Zhangsan BEI Lisi break PFV this/that-CL leg

b. **Zhangsan bei Lisi jian le zhe/na-cuo toufa.*

Zhangsan BEI Lisi cut PFV this/that-lock hair

The unacceptability of (4.38) strongly suggests that the postverbal noun phrase in the retained object construction can only be interpreted as referring to a kind and not to some particular individual. Predictably, a nonspecific indefinite or quantified NP is also allowed to occur in the retained object position, since neither of them takes reference to any particular entity, as exemplified in (4.39).

(4.39) a. *Zhangsan bei Lisi daduan le yi/liang-tiao tui.*

Zhangsan BEI Lisi break PFV one/two-CL leg

b. *Zhangsan bei Lisi jian le yixie/xuduo toufa.*

Zhangsan BEI Lisi cut PFV some/many hair

In the current literature, we can also see the following data employed by a very few authors.

(Lapolla 1989)

(4.40) *John bei wo ge le ta de yizhi shou.*

John BEI 1SG cut PFV 3SG ‘s one-CL hand

‘John had a hand cut off by me.’

(Shi 1997)

(4.41) *laoshi bei jiao le ziji de toufa.*

teacher BEI cut PFV self 's hair

*‘The teacher’s self hair was cut.’

All the native speakers queried by the author insist that these sentences sound rather bad. The reason is quite simple. As already discussed in footnote 16, topic structure and passive structure are liable to be indiscriminately used. Theoretically, specifying the reference of the retained object NP as in these examples is the consequence of neglecting the grammatical function of *bei* which always licenses the pre-*bei* NP or the moved object to be the patient of a complex predicate (composed of a verb and the retained object) and hence allows this pattern to have a pragmatically transparent reading with regard to the affectedness of the retained object, as already discussed in subsection 4.4.1.1. In both topic sentences and canonical sentences, e.g. deleting the *bei* in (4.40)-(4.41), the reference of the object NP has to be specified, since otherwise ambiguity would arise as discussed in section 4.2.

(4.42) *John wo ge le ta de yizhi shou.*

John 1SG cut PFV 3SG 's one-CL hand

‘John, I cut off one of his hands.’

(4.43) *laoshi jiao le ziji de toufa.*

teacher cut PFV self 's hair

‘The teacher cut his/her own hair.’

There is therefore no need at all to specify the object NP. On account of this, the use of a pronominal specifier or a reflexive specifier before the object NP would result in pragmatic infelicity (see L. Wang 1959 among others for a discussion of the relevant data).

The combination of the verb and the retained object are as a matter of fact interpreted in the same fashion as the compound verbs like *ma-ren* (lit. scold-people) ‘scold’ and *da-ren* (lit. beat-people) ‘beat’, where the bare NP *ren* is an internal object without any particular reference. Given the well-known fact that Chinese bare nouns can occur in any argument position and can have a variety of interpretations as discussed in Chapter 1, the semantic behaviour of the object NP certainly begs one question, that is, why does it only have a restricted reading?

The answer is quite straightforward but illustrates the importance of context on the construction of a special grammatical structure. From the parsing point of view, the pre-*bei* expression or the moved object has already been identified as the internal argument by the voice marker. The NP encountered after the verb cannot therefore be the primary object of the verb and so must be a modifier of some kind. In view of this, the reading on the retained object is as a matter of fact pre-determined. Further evidence for the modificational nature of the retained object comes from the fact that adjunct NPs can also appear in such a pattern, as exhibited in (4.44).

(4.44) a. *Zhangsan bei Lisi daduan le yi-hui tui.*

Zhangsan BEI Lisi break PFV one-time leg
 ‘Zhangsan’s leg was broken once by Lisi.’

b. *Zhangsan bei Lisi jian le liang-ci toufa.*

Zhangsan BEI Lisi cut PFV two-time hair
 ‘Zhangsan’s hair was cut twice by Lisi.’

Having spelled out the semantics of the retained object in BCRO, then, we ascertain that the pre-*bei* NP or the moved object in this problematic pattern, as in the canonical patterns, is still the patient, yet of the complex predicate, leg-breaking in (4.34a) or hair-cutting in (4.34b). The interpretation of the sentences in (4.34) should thus rather be ‘Zhangsan was the object of leg-breaking by Lisi’ and ‘Zhangsan was the object of hair-cutting by Lisi.’ The pre-determined nature of the semantics of the retained object

is another piece of evidence supporting the DS stance stated in Chapter 2 that human language processing is context-dependent and the change of context is word by word as well as sentence by sentence.

4.4.1.3 *The active counterpart of BCRO*

The reason why I call BCRO one of the problematic patterns should be clear now, since it is really more problematic to characterise than the canonical patterns. From the interpretive point of view, the pre-*bei* constituent in this problematic pattern cannot be reconstructed as easily as the one in the canonical patterns where there is clearly a gap in the postverbal object position. For the pattern at issue, there appears to be no place for this so-called moved object to go to since the object position has been already occupied by the retained object. At this point, one may raise a related question like, what is the active counterpart of the pattern under discussion, given *bei*'s presupposition that the preceding argument is still the patient of the complex predicate?

Although it is an undeniable fact that not all passives can be translated into actives, or vice versa, we are likely to provide an active counterpart for sentences of this problematic pattern. Following the idea of L. Wang (1959) among others that generally a *bei* sentence can be turned into a *ba* sentence, we are able to put passive sentences like (4.33) into active ones with a *ba* construction, as illustrated below.

(4.45) a. *Lisi ba Zhangsan daduan le tui.*

Lisi BA Zhangsan break PFV leg

'Lisi broke Zhangsan's leg.'

b. *Lisi ba Zhangsan jian le toufa.*

Lisi BA Zhangsan cut PFV hair

'Lisi cut Zhangsan's hair.'

This translation rule can also be extended to other puzzling cases of the same pattern,

like *bei* constructions with two number phrases, one of which acts as the moved object and the other the retained object. Compare the following passive-active pairs:²²

- (4.46) a. *wu-ge li bei Lisi chi le san-ge.*
 five-CL pear BEI Lisi eat PFV three-CL
 'Three of the five pears were eaten by Lisi.'
- b. *Lisi ba wu-ge li chi le san-ge.*
 Lisi BA five-CL pear eat PFV three-CL
 'Lisi ate three of the five pears.'
- (4.47) a. *jiu-ge miyu bei Lisi caidui le liu-ge.*
 nine-CL riddle BEI Lisi resolve PFV six-CL
 'Six of the nine riddles were solved by Lisi.'
- b. *Lisi ba jiu-ge miyu caidui le liu-ge.*
 Lisi BA nine-CL riddle resolve PFV six-CL
 'Lisi resolved six of the nine riddles.'

The translation from *bei* constructions into *ba* constructions at least shows that there is a close relationship between these two types of grammatical structure. It appears that both constructions are chained to the leftward dislocation: the affected object NP is first fronted in the preverbal position, which gives rise to the *ba* construction, and further fronted in sentence-initial position, which gives rise to the *bei* construction. For immediate purposes, I shall not necessarily provide a detailed discussion of this issue.²³

²² Note that if the voice marker *bei* is omitted, the resulting sentences are also well-formed topic constructions.

²³ It has also been a problematic issue in Chinese grammar to characterise the relationship between these two well-known grammatical structures. L. Wang (1959) has initially observed that the object NP can be fronted by *ba* only when it is affected by the action of the verb. If this observation is correct, the post-*ba* NP and the pre-*bei* NP share at least one semantic property in that both of them are generally subject to the affectedness condition. This may explain why generally *ba* constructions and *bei* constructions are intertranslatable.

4.4.1.4 The formalisation of BCRO

On the basis of the discussion above, we are able to formalise the pattern at issue by encoding the idea that the so-called moved object NP is still the patient argument of the main predicate, exactly the complex predicate. What is crucial to the formalisation of this problematic pattern is of course the parsing of its complex verb. Consider the analysis of (4.3a) *Zhangsan bei Lisi daduan le tui*. The first three words in the string are parsed as we have seen before: the left-dislocated NP *Zhangsan* decorates an unfixed node with type and formula information; the voice particle *bei* imposes locality restrictions on this node; and *Lisi* is analysed as the subject. Then the verb *daduan* ‘break’ is parsed, whose lexical entry for the verb *daduan* ‘break’ can be defined as follows:

(4.48) The lexical entry for *daduan*

IF	$?Ty(e \rightarrow t)$
THEN	$make(\langle \downarrow_* \rangle); go(\langle \downarrow_* \rangle);$ $put(Ty(e^* \rightarrow (e \rightarrow (e \rightarrow t))) ; Fo(Daduan)); go(\langle \uparrow_* \rangle);$ $make(\langle \downarrow_1 \rangle); go(\langle \downarrow_1 \rangle); put(Ty(e \rightarrow (e \rightarrow t))) ; go(\langle \uparrow_1 \rangle);$ $make(\langle \downarrow_0 \rangle); go(\langle \downarrow_0 \rangle); put(?Ty(e))$
ELSE	ABORT

The treatment of the verb *daduan* ‘break’ as projecting an unfixed node in the context of (4.3a) reflects the psychological reality that the hearer is in a wait-and-see state. In other words, psychologically there is justification for such a treatment of the verb: when the verb is accessed, the hearer immediately knows that the verb must be followed by something else, because it cannot semantically select the pre-*bei* patient NP as its internal argument; otherwise, it would give rise to a logical formula *Daduan(Zhangsan)* which is pragmatically anomalous. Subsequent to the parse of the verb, general construction rules then create the internal argument and 2-place predicate nodes as previously and the unfixed node merges with the former position,

necessarily satisfying the locality requirement, as shown in figure 4.8.

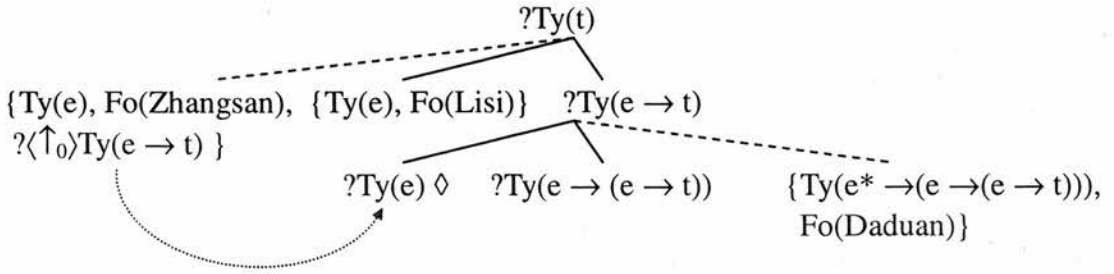


Figure 4.8: Parsing *Zhangsan bei Lisi daduan le*

Subsequent to the fixing of the unfixed node, general construction rules unfold two further subrequirements to allow for the parse of the retained object NP *tui*. The pointer then moves to the functor node with which the unfixed predicate node merges since there is no further input. The verbal underspecification is finally resolved as $Ty(e \rightarrow (e \rightarrow (e \rightarrow t)))$, as shown in figure 4.9, where the tree will be completed to yield a complete propositional formula $Fo(Daduan)(Tui)(Zhangsan)(Lisi)$.

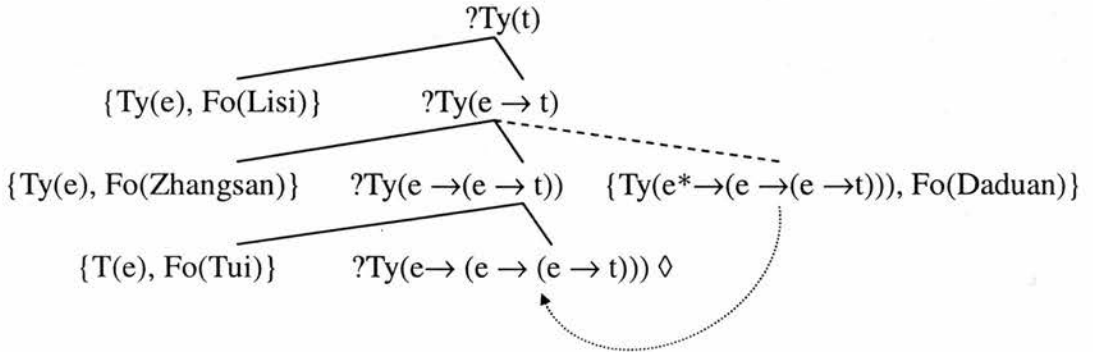


Figure 4.9: Parsing *Zhangsan bei Lisi daduan le tui*

The dynamic analysis can be straightforwardly extended to other puzzles of the same pattern. The interpretation of the *bei* construction with two number phrases like (4.46a), for example, can be represented in a tree as in figure 10 where there is no outstanding requirement.²⁴

²⁴ The two numbers can be labelled as different types, the one in the specifier position as $Ty(e \rightarrow e)$ and the other one in the argument position as $Ty(e)$ since it behaves like an indefinite pronoun.

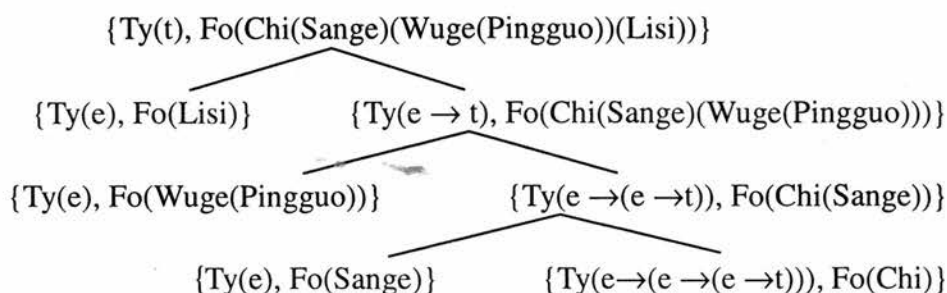


Figure 4.10: Parsing *wu-ge pinguo bei Lisi chi le san-ge*

For a complete success of the characterisation of BCRO, there is nonetheless a great need to generalise the relationship between the so-called moved object and the retained object. It has been generally agreed that the relation between the two objects is not random, but confined to possessor-possessee as in (4.34), kinship as in (4.37) and part-whole as in (4.46). On the basis of this observation, A. Li (1990) proposes that the relationship between the two NPs can be schematised as $NP_2 + de + NP_1$, where NP_1 is the retained object and NP_2 the moved object. This generalisation, as pointed out by Shi (1997) among other authors, is too restrictive to be accurate. Consider the following examples where the two objects cannot be expressed in the form formulated by A. Li.

(L. Li 1980)

(4.49) a. *na-kuai bu bei ta zuo le yitiao kuzi.*

that-CL cloth BEI 3SG make PFV one-CL trousers

‘The cloth was made into a pair of trousers by him.’

b. **na-kuai bu de yitiao kuzi bei ta zuo le.*

that-CL cloth ‘s one-CL trousers BEI 3SG make PFV

(Ibid)

(4.50) a. *yifu bei huo shao le yi-ge kulong.*

clothes BEI fire burn PFV one-CL hole

‘The clothes were burned a hole by fire.’

b. **yifu de yi-ge kulong bei huo shao le.*

clothes ‘s one-CL hole BEI fire burn PFV

The relationship between the two NPs is another manifestation of BCRO's problematic facets. What appears to be happening is that a weak relation between the retained and moved objects is derived from the concept denoted by the predicate or complex predicate. Precisely, their bilateral relation can only be established vis-à-vis their unilateral relation with the verb or complex verb: the retained object in any case is subject to the selectional restriction of the verb, while the moved object in any case is subject to the selectional restriction of the complex verb composed of the verb and the retained object (cf. Shi 1997). In a sense, the relation between the moved object NP and the retained object NP is similar to the aboutness relation discussed in the preceding chapter: the former as a given term sets the context in which the latter has got to be related to it. This generalisation does capture the interactive relation between the two NPs.

4.4.2 *Bei construction with an embedded ba construction (BCBC)*

We now turn to another *bei* construction involving an embedded *ba* construction and show how we can adapt the analysis of the canonical patterns to account for this problematic pattern as well. Differently from BCRO where there is an object in the postverbal position, BCBC has an object marked by *ba* in the preverbal position, as illustrated in (4.4), repeated as (4.51).

(4.51) a. *Zhangsan bei Lisi ba tui daduan le yi-tiao.*

Zhangsan BEI Lisi BA leg break PFV one-CL

'One of Zhangsan's legs was broken by Lisi.'

b. *Zhangsan bei Lisi ba toufa jian le yi-cuo.*

Zhangsan BEI Lisi BA hair cut PFV one-lock

'One lock of Zhangsan's hair was cut by Lisi.'

Before we tackle this problematic pattern, we have to provide a preliminary analysis of *ba* constructions within the framework of DS.

4.4.2.1 *Ba* construction

Unlike *bei*, there has generally been a consensus on the grammatical function of *ba*, i.e., it is a meaningless marker of fronted object, since the post-*ba* NP is usually the direct object of the verb, as exemplified below.

(4.52) a. *Zhangsan ba fangzi mai le.*

Zhangsan BA house sell PFV

‘Zhangsan sold the/his house.’

b. *Zhangsan mai le fangzi.*

Zhangsan sell PFV house

‘Zhangsan sold the/his house.’

(4.53) a. *Zhangsan ba qiche diu le.*

Zhangsan BA car lose PFV

‘Zhangsan lost the/his car.’

b. *Zhangsan diu le qiche.*

Zhangsan lose PFV car

‘Zhangsan lost the/his car.’

Compared with their counterparts in the canonical sentences, the post-*ba* noun phrases in *ba* sentences are dislocated preverbally, albeit very locally. Therefore, it is reasonable to analyse the post-*ba* NP as projecting an unfixed node. Since this possibility is induced by parsing *ba*, we may assume that it is the lexical actions of this morpheme that construct an unfixed node within the predicate structure, as in (4.54):²⁵

²⁵ One of the consequences of our dynamic analysis of *ba* constructions is that it will allow the immediate occurrence of a *ba*-less object NP right before the verb, as exhibited in (i)-(ii).

(i). *Zhangsan fangzi mai le.*

Zhangsan house sell PFV

‘Zhangsan sold the/his house.’

(ii). *Zhangsan qiche diu le.*

Zhangsan car lose PFV

‘Zhangsan lost the/his car.’

As has been discussed in Chapter 1, sentences of this sort are quite commonplace in Chinese.

(4.54) Lexical entry for *ba*

```

IF      ?Ty( $e \rightarrow t$ )
THEN   IF       $\langle \downarrow_* \rangle \perp$ 
        THEN   make( $\langle \downarrow_* \rangle$ ); go( $\langle \downarrow_* \rangle$ );
        put(?Ty( $e$ ), ? $\langle \uparrow_0 \rangle$ Ty( $e \rightarrow t$ ), ? $\exists x.Tn(x)$ )
        ELSE   ABORT
ELSE   ABORT

```

What the actions of *ba* do is to project an unfixed node with a type e requirement just in case there is nothing else within the predicate domain at this point of parse. This is to ensure that the verb has not been yet parsed, thus accounting for the ungrammaticality of sentences like (4.55).

(4.55) a. **Zhangsan mai le ba fangzi.*

Zhangsan sell PFV BA house

b. **Zhangsan diu le ba qiche.*

Zhangsan lose PFV BA car

One may suggest that *ba* should project a fixed node rather than an unfixed one, since the unfixed object node is very local. The analysis of the object marker as projecting a fixed node (i.e. make-go-put $\langle \downarrow_0 \rangle$) would have a problem with the following data in which a predicate adverb can occur between the *ba*-marked object NP and the main verb that is analysed throughout the thesis as being invariably triggered by a one-place predicate node ?Ty($e \rightarrow t$).

(4.56) *Zhangsan ba Lisi yansudi piping le yidun.*

Zhangsan BA Lisi seriously criticise PFV once

‘Zhangsan seriously criticised Lisi once.’

(4.57) *wo ba na-ben shu renzhendi du guo liangbian.*

1SG BA that-CL book carefully read EXP twice

'I have carefully read the book twice.'

So it is reasonable to treat the fronted object marker *ba* as projecting an unfixed node, although fairly local. Furthermore, as with the *bei* construction there is a restriction on the final position of the unfixed node to be the argument daughter of the predicate node. The parse a sentence like (4.52a), therefore, is quite straightforward. The subject and predicate nodes are created and the subject is then parsed, leaving the pointer at the open predicate requirement. At this point, *ba* is parsed to give a structure shown in figure 4.11.

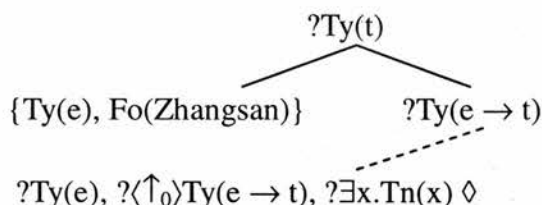


Figure 4.11: Parsing *Zhangsan ba*

The pointer is now at a node with a requirement for a type *e* expression and so the post-*ba* object NP can be processed. After the unfixed node is developed, the pointer moves back to the functor node. This allows the verb to be parsed, which results in the projection of an unfixed predicate node. Then through the general construction rules the construction of an argument and two-place predicate nodes takes place. The unfixed *Ty(e)* node merges with the argument position, as shown in figure 4.12.

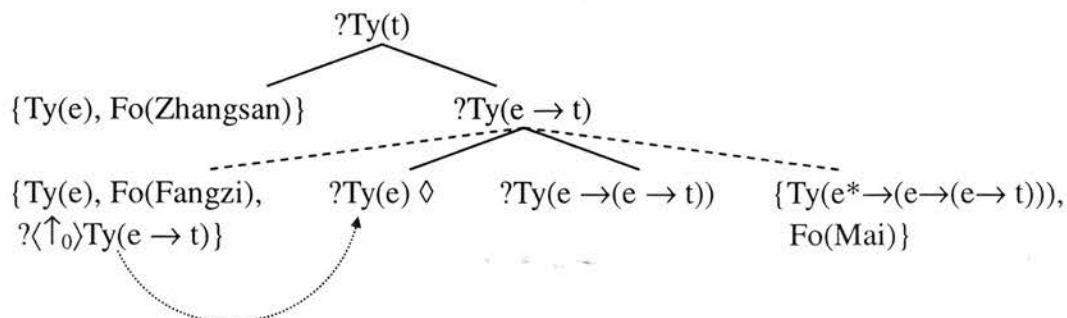


Figure 4.12: Parsing *Zhangsan ba fangzi mai le*

If there is further lexical input like *yi-ban* ‘half’ after the verb as in *Zhangsan ba fangzi mai le yi-ban*, the 3-place predicate node would have two further requirements. In the case of (4.52a), the unfixed predicate node merges with the functor node, resolving the verb’s type underspecification. Completing the semantic tree ultimately yields a full propositional formula as *Mai(Fangzi)(Zhangsan)*.

4.4.2.2 *Ba construction with a retained object*

As has been noticed by a number of linguists (e.g. L. Wang 1959, C. Li & Thompson 1981), there is a parallelism in many regards between *ba* constructions and *bei* constructions, which may account for why passive sentences of the pattern BCRO can be translated into active ones with a *ba* construction, as illustrated in subsection 4.4.1.3. *Ba* sentences parallel *bei* sentences at least in two aspects. Syntactically, *ba* constructions, just like *bei* constructions, can also have a noun phrase in the postverbal object position, as demonstrated in (4.58).

- (4.58) a. *Zhangsan ba qiche jia le you.*
 Zhangsan BA car add PFV petrol
 ‘Zhangsan refilled the/his car.’
 b. *Zhangsan chang ba lang dangzuo gou.*
 Zhangsan often BA wolf take-for dog
 ‘Zhangsan often takes wolfs for dogs.’

Semantically, the post-*ba* NP in the two sentences of (4.58), just like the pre-*bei* NP, is subject to the selectional restrictions of the complex verb formed from the verb plus the following noun phrase. The resulting sentences would be anomalous if the post-*ba* NPs *che* ‘car’ and *lang* ‘wolf’ are replaced by, say, *shouji* ‘mobile’ and *niao* ‘bird’ respectively, because the mobile phone does not need refilling and the class ‘birds’

does not resemble the class ‘dogs’.

In addition, as C. Li & Thompson 1981 point out, there is a semantic constraint on the interpretation of the post-*ba* noun phrase, namely it can either have a referential reading as shown in the English translation of (4.58a) or a generic reading as shown in the English translation of (4.58b). Furthermore, the postverbal or retained object NP in this complex pattern of *ba* construction, just like its counterpart in the problematic pattern of *bei* construction addressed in the preceding subsection, is usually interpreted as referring to a kind, as *you* ‘oil’ in (4.58a). Sentences of the same sort can also take an adjunct phrase, as shown in (4.59).

- (4.59) a. *Zhangsan ba qiche jia le yi-hui you.*
 Zhangsan BA car add PFV one-time petrol
 ‘Zhangsan refilled the/his car once.’
- a. *Lisi ba meigui jiao le san-bian shui.*
 Lisi BA rose pour PFV two-time water
 ‘Lisi watered the roses three times.’

As for the characterisation of *ba* construction with a retained object, presumably it is in the same fashion as the canonical *ba* construction. Figure 4.13 shows that the parse of (4.58a) is completed, resulting in the annotation of the root node with a complete propositional formula *Jia(You)(Qiche)(Zhangsan)*.

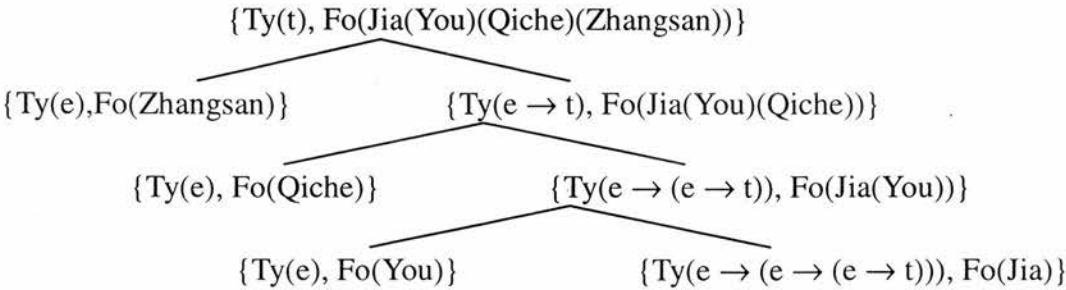


Figure 4.13: Completing the parse of *Zhangsan ba qiche jia le you*

4.4.2.3 The formalisation of BCBC

After a fruitful exploration of *ba* constructions, let us now return to the analysis of *bei* constructions containing a *ba* construction (BCBC). Presumably, the characterisation of this pattern would be more problematic than the one we have tackled in subsection 4.4.1. However, the successful formalisation of BCRO and the relevant *ba* construction should provide some insights into the analysis of BCBC. It goes without saying that what is crucial in the parse representation of this pattern is the parse of the *ba* construction. In the light of the work we have done so far, we assume with confidence that the *ba* construction embedded within the *bei* construction must be subject to the twofold restrictions (see L.Wang 1959 for a discussion). Specifically, on the one hand, it is constrained by its own rule that a *ba* construction normally requires the presence of the agent NP, which explains why the following *bei* sentences are ungrammatical:

- (4.60) a. **Zhangsan bei ba tui daduan le yi-tiao.*

Zhangsan BEI BA leg break PFV one-CL

‘One of Zhangsan’s legs was broken.’

- b. **Zhangsan bei ba toufa jian le yi-cuo.*

Zhangsan BEI BA hair cut PFV one-lock

‘One lock of Zhangsan’s hair was cut.’

On the other hand, it is constrained by the rule of *bei* constructions that the retained object NP does not have a particular reference due to *bei*’s grammatical function as discussed in subsection 4.4.1, which explains why the following *bei* sentences are ill-formed:

- (4.61) a. **Zhangsan bei Lisi ba zhe-tiao tui daduan le.*

Zhangsan BEI Lisi BA that-CL leg break PFV

‘Zhangsan had that leg of his broken by Lisi.’

b. *Zhangsan bei Lisi ba na-cuo toufa jian le.

Zhangsan BEI Lisi BA that-lock hair cut PFV

‘Zhangsan had that lock of his hair cut by Lisi.’

We have, in (4.54) in the preceding subsection, characterised *ba* as requiring the term projected by its following NP to be analysed as the internal argument of the main predicate. DS by its dynamic nature, however, allows different actions to be triggered in different contexts, in particular the context provided by the partial tree representing the content of the string at a certain point. When *ba* occurs in a string containing *bei*, at the point at which the former expression is parsed, the hearer already knows that the internal argument position is to be occupied by the term projected by the pre-*bei* expression. Any interpretation of the post-*ba* expression as occupying the same position is thus unlikely to be entertained. To achieve this effect, we can revise the lexical entry for the *ba* in this problematic pattern as follows:

(4.62) Revised Lexical entry for *ba*

```

IF      ?Ty( $e \rightarrow t$ )
THEN    IF       $\langle \downarrow_* \rangle \perp$ 
          THEN    IF       $\langle \uparrow_1 \rangle \langle \uparrow_* \rangle \langle \downarrow_* \rangle ?\langle \uparrow_0 \rangle \text{Ty}(e \rightarrow t)$ 
                        THEN    make( $\langle \downarrow_* \rangle$ ); go( $\langle \downarrow_* \rangle$ );
                                put( $?Ty(e)$ ,  $? \langle \uparrow_0 \rangle \text{Ty}(e \rightarrow (e \rightarrow t))$ ,  $? \exists x. Tn(x)$ );
                        ELSE    make( $\langle \downarrow_* \rangle$ ); go( $\langle \downarrow_* \rangle$ );
                                put( $?Ty(e)$ ,  $? \langle \uparrow_0 \rangle \text{Ty}(e \rightarrow t)$ ,  $? \exists x. Tn(x)$ );
          ELSE    ABORT
ELSE    ABORT

```

The extra clauses here cause a check to see whether there is a node dominated by the top node which carries an unsatisfied requirement to be the internal argument of a predicate, shown as $\langle \uparrow_1 \rangle \langle \uparrow_* \rangle \langle \downarrow_* \rangle ?\langle \uparrow_0 \rangle \text{Ty}(e \rightarrow t)$ which reads as ‘my immediately

dominating node dominates a node with an internal argument requirement. In this context, a requirement is added to the projected unfixed node that it must be dominated by a 2-place predicate node shown as $?\langle\uparrow_0\rangle Ty(e \rightarrow (e \rightarrow t))$. In any other context, the unfixed node is dominated by a one-place predicate. So it is only in BCBC sentences that a post-*ba* NP will be interpreted as providing the content for an indirect object. This successfully accounts for the unacceptability of the string in (4.63a) where *Zhangsan* cannot be construed as the indirect object of the verb and *tui* cannot be the direct object. Compare with the grammaticality of (4.63b) with a pronoun in possessor position and *Zhangsan* construed as a true topic.²⁶

(4.63) a. **Zhangsan Lisi ba tui daduan le.*

Zhangsan Lisi BA leg break PFV

b. *Zhangsan Lisi ba ta de tui daduan le.*

Zhangsan Lisi BA he 's leg break PFV

'Zhangsan, Lisi broke his leg.'

Given the revision of the actions induced by parsing *ba*, an analysis of the sentence in (4.51a) *Zhangsan bei Lisi ba tui daduan le yitiao* is fairly straightforward. Parsing the first four words gives rise to a partial tree in figure 4.14, following the analysis already specified.

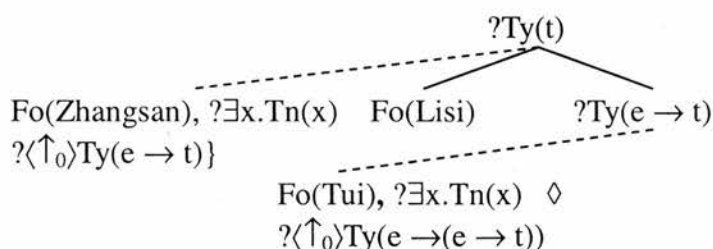


Figure 4.14: Parsing *Zhangsan bei Lisi ba tui*

²⁶ The sharp contrast between the ungrammaticality of (4.63a) and the grammaticality of (4.63b) indicates that *bei* does define the internal argument node. As for the topic sentence (4.63b), the initial NP has a LINK relation with the comment clause where the pronoun *ta* 'he' has to be construed as *Zhangsan*.

After the post-*ba* NP *tui* is parsed, the pointer moves back to the functor node. The parse then continues with the verb *daduan* projecting an unfixed predicate node, followed by the unfolding the fixed argument and functor nodes dominated by the predicate node. At this point, the unfixed node decorated by *Fo(Zhangsan)* merges with the internal argument node, as shown in figure 4.15.

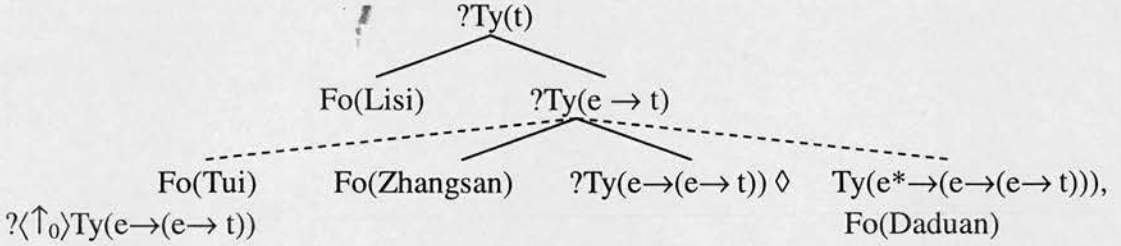


Figure 4.15: Fixing the unfixed node projected by the pre-*bei* NP

Subsequent to the fixing of the unfixed node projected by the pre-*bei* NP, the pointer moves to the two-place predicate node which has further requirements for a 3-place predicate and a term. The unfixed node decorated by *Fo(Tui)* merges with the latter position, satisfying its locality requirement, as shown in figure 4.16.

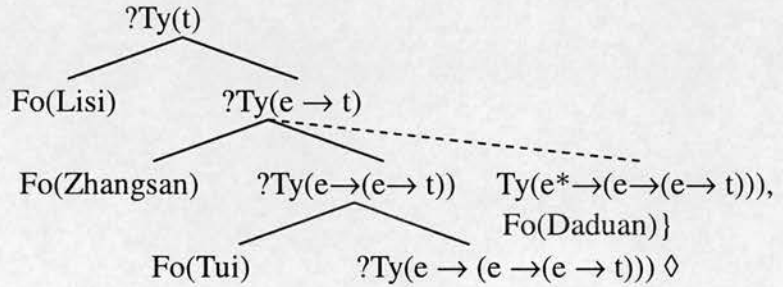


Figure 4.16: Fixing the unfixed node projected by the post-*ba* NP

Subsequent to the fixing of the unfixed *ty(e)* node projected by the post-*ba* NP, the pointer moves to the three-place predicate node which is further elaborated with another pair of argument and functor nodes. What comes next as input is the indefinite pronoun *yi-tiao* ‘one’, which satisfies the argument type requirement. Since there is no further input, the unfixed predicate node merges with the four-place predicate node, as

in figure 4.17.

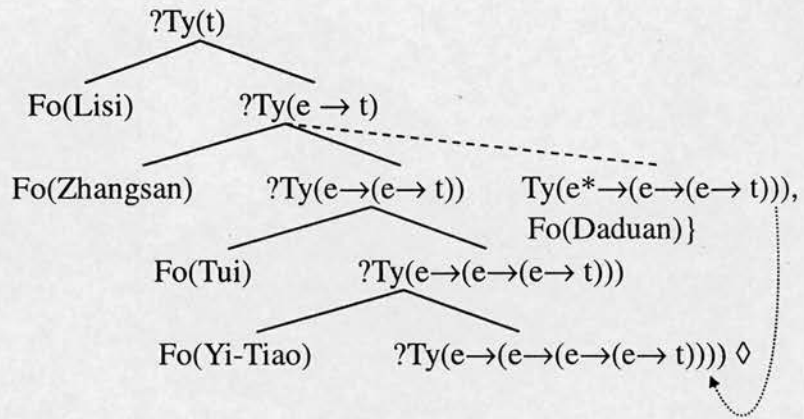


Figure 4.17: Fixing the unfixed predicate node

The tree complies to give the formula value *Daduan(Yitiao)(Tui)(Zhangsan)(Lisi)*, showing a hierarchy among the argument nodes. With the addition of each argument, the predicate becomes more and more complex: first, the verb semantically selects the rightmost argument, **the postverbal indefinite pronoun**, and combines with it to form a complex predicate which then semantically selects **the post-*ba* object NP** as its argument, which in turn combines with the complex predicate to form another complex predicate, which once again selects an argument – **the pre-*bei* patient NP** – as its internal argument, which in turn combines with the more complex predicate to form a much more complex predicate which finally selects **the agent NP** as its argument. I do not here go into the details of this propositional structure, but the discussion of the general interpretation of *bei* and *ba* constructions above provides the core of the analysis.

4.4.3 *Bei* construction with a locative patient (BCLP)

Finally, we turn to another problematic pattern of *bei* constructions which different from the two problematic patterns addressed in subsections 4.4.1 and 4.4.2, has a locative phrase fronted prior to the voice marker *bei*, as has been already seen in (4.5), repeated as (4.64) below.

(4.64) a. *men shang bei haizimen wa le yi-ge dong.*

door on BEI children dig PFV one-CL hole

Lit. 'On the door was dug-a-hole by the children.'

b. *hu li bei cunminmen yang le henduo eyu.*

lake in BEI villagers raise PFV many crocodile

Lit. 'In the lake was raised-many-crocodiles by the villagers.'

If we treat the locative expression *men shang* 'on the door' and *hu li* 'in the lake' as an adjunct phrase as in traditional grammar, we may face a theoretical problem because in principle, the pre-*bei* constituent is analysed as projecting a node with a requirement for a type *e* expression, as we did in all the analyses of *bei* constructions of various patterns, whether canonical or problematic. To provide a principled account of *bei* constructions, we are required to reconsider the traditional distinction between arguments and adjuncts.

4.4.3.1 *PP as arguments*

For immediate purposes, I shall limit the discussion here to the argument-like properties of prepositional phrases. The issue of argument-adjunct dichotomy certainly involves the traditional notion of subcategorisation that entails a distinction between arguments, which are defined as obligatory because they are subcategorised, thus necessarily expressed nominal expressions which are in a strict relationship to the verb, and adjuncts, which are defined as optional because they un-obligatorily add further information about time, place, purpose and manner and so on. Morphologically, arguments tend to be marked with nominative and accusative case in some inflectional languages, while adjuncts are often introduced by a preposition or marked as adverbs in many languages.

However, as has been briefly discussed in Chapter 2, the distinction between arguments and adjuncts, which may have been useful as a rough-and-ready criterion, is not as clear as that implied by such a strict subcategorisation. As has been observed

and discussed by a lot of researchers (e.g. McConnell-Ginet 1982, Chierchia 1989, Grimshaw 1990, Jackendoff 1990, Hukari & Levine 1995), adjuncts sometimes behave in the same fashion as arguments. In the following English examples, the prepositional phrases in (4.65a-b) appear to be obligatory arguments of the predicate and are hence generally analysed as direct complements of the predicate whose lexical semantics selects the particular preposition, and those in (4.65c-d) seem to have a strong connectivity with the predicate though they are optional.

- (4.65) a. *The singer put the flowers onto the floor.*
 b. *The footballer resides in the lake district.*
 c. *The squirrel ran to the castle.*
 d. *The cat pushed the ball to me.*

The prepositional (and postpositional) phrases in the Chinese equivalents to the above English sentences function in exactly the same fashion, as shown in (4.66) below.

- (4.66) a. *geshou ba hua fang *(zai diban shang).*
 singer BA flower put LOC floor on
 b. *zuqiu mingxing zhu *(zai hu qu).*
 football star reside in lake district
 c. *songshu pao xiang chengbao.*
 squirrel run to castle
 d. *mao ba qiu tui gei wo.*
 cat BA ball push to 1SG

Cross-linguistically, there is also ample evidence that adjuncts have their case overtly marked in the same manner as arguments (e.g. Maling 1989, 1993; Andrews, 1990, Kim & Maling 1993, Wechsler & Lee 1996). In languages with a rich case system like Finnish, for instance, some adverbial expressions, which may be corresponding to prepositional phrases in English, are on a par with noun phrases in terms of case

assignment.

(Maling 1993)

(4.67) a. *Kansa luotti Kekkoseen vuoden.*

People-NOM trust-PST-3SG Kekkoseen-ACC year-ACC

‘People trusted Kekkoseen for a year.’

b. *Mina luen kirjan kolmannen kerran.*

I(NOM) read book-ACC third time-ACC

‘I read the book for a third time.’

Also in East-Asian Languages like Korean, certain adjunct NPs as well as complement NPs are also in the case-assigning domain. Consider the following examples taken from Wechsler & Lee 1996, where the accusative case particle *-(l)ul* appears on adverbial NPs as well as object NPs, which shows that these adjuncts have the property characteristic of syntactic case.

(4.68) a. *Tom-i twu sikan-tongan-ul tali-ess-ta.*

Tom-NOM two hours-period-ACC run-PST-DEC

‘Tom ran for two hours.’

b. *Tom-i isip mail-ul tali-ess-ta.*

Tom-NOM twenty miles-ACC run-PST-DEC

‘Tom ran twenty miles.’

Given the fact that sometimes adjuncts like prepositional phrases behave in the same fashion as arguments, both semantically and syntactically, it seems inappropriate to analyse the PP as having the type of a predicate modifier. Therefore, it is reasonable to assume that it is behaving like a term and hence can be analysed as a Ty(e) expression. To incorporate this into the formalism of DS, Marten (2002) develops a dynamic analysis of verbal underspecification, as has been already introduced in Chapter 2. The main idea is that dynamically verbs structurally underspecify the number of Ty(e)

expressions, including both NPs and PPs with which they may combine to form a verbal phrase.

The formalisation of verbal underspecification involving prepositional phrases can be illustrated by the parsing of the verb *sing* in an utterance as follows (cf. Marten 2002).²⁷

(4.69) *David sang for Mary with a loudspeaker in the garden on Sunday.*

From a parsing point of view, the intransitive verb *sing* in this context can be assigned an underspecified type value, $Ty(e^* \rightarrow (e \rightarrow t))$, which means that it minimally requires one expression of $Ty(e)$, namely a subject NP, and that it allows for a potentially unlimited number of optional $Ty(e)$ expressions. The type underspecification of *sing* is incrementally resolved, and the parse could possibly result in a variety of derivations as follows, depending on the lexical input.

(4.70) a. *David sang.*

b. *David sang for Mary.*

c. *David sang for Mary with a loudspeaker.*

d. *David sang for Mary with a loudspeaker in the garden.*

e. *David sang for Mary with a loudspeaker in the garden on Sunday.*

The concept of the word *sing* is pragmatically enriched with more coming lexical information. Figure 4.18 illustrates that the parse of the utterance (4.69) gives rise to a tree structure after introducing the last PP *on Sunday*.

²⁷ Here I shall not go into the details of how the lexical actions of various types of prepositions are defined. Interested readers are referred to Marten (2002).

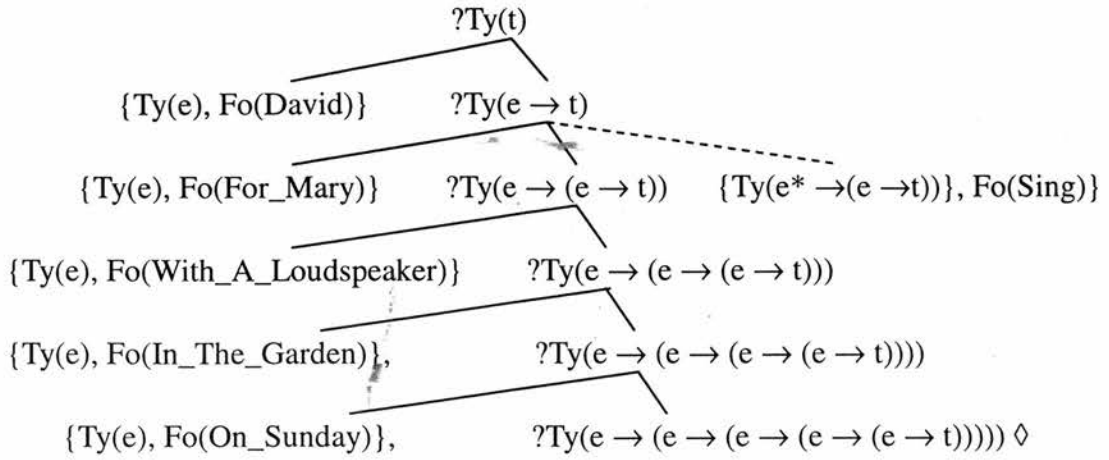


Figure 4.18: Parsing the utterance (4.69)

4.4.3.2 The formalisation of BCLP

We now return to the analysis of the problematic pattern at issue. As I have indicated above, a prepositional (or postpositional phrase) phrase can be considered as some expression of type e . The locative phrase prior to the voice marker *bei* therefore gives rise to a $Ty(e)$ expression, which is completely consistent with the account of other patterns of *bei* construction. The parsing strategy employed in interpreting this type of *bei* sentences is intrinsically the same as that we used to tackle the problematic patterns BCRO and BCBC: (i) the PP initially projects an unfixed node with a specific positional requirement $?(\uparrow_0)Ty(e \rightarrow t)$; (ii) the unfixed node finally merges with the internal argument position of the predicate.

Given the discussion above, an analysis of the *bei* sentence in (4.64a) *men shang bei haizimen wa le yige dong* is also quite straightforward. Parsing the first four words yields a tree structure as in figure 4.19, where the pre-*bei* locative projects an unfixed argument node and the verb an unfixed predicate node, and after the unfolding of a pair of nodes the former merges with the argument node, satisfying its locality requirement.

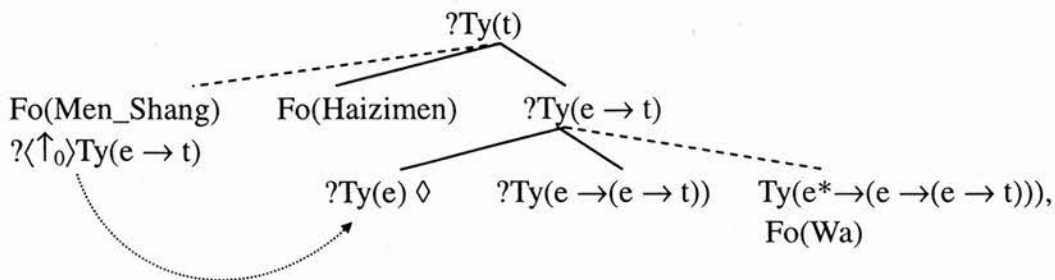


Figure 4.19: Parsing *men shang bei Lisi wa (le)*

Then the parse continues with the further elaboration of the 2-place predicate with another pair of argument and functor nodes. What comes as input is the noun phrase *yi-ge dong* ‘one hole’, which satisfies the argument type requirement. Since there is no further lexical information, the unfixed predicate node merges with the 3-place predicate node, thereby resolving its type underpsecification. Compilation of the tree yields a propositional formula annotating the top node of the tree as in figure 4.20.

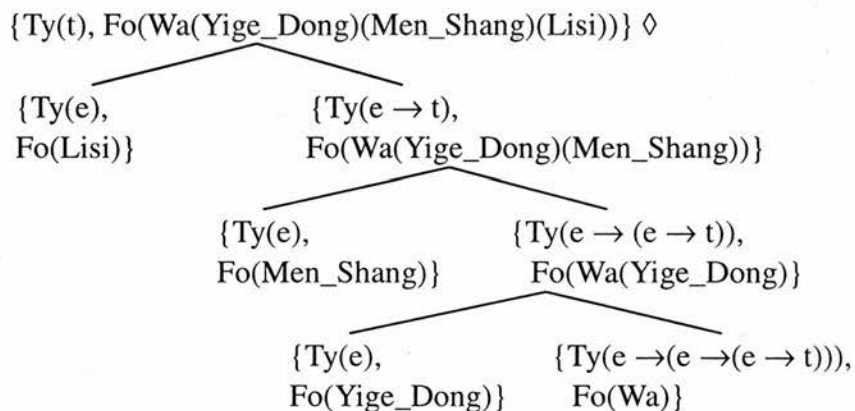


Figure 4.20: Completing the parse of (4.64a)

With the pre-*bei* PP analysed as a $Ty(e)$ expression, BCLP is formalised in the same elegant fashion as BCRO and BCBC. Thus, a principled account of *bei* constructions is provided.

4.5 Summary

On the basis of a detailed examination of the basic facts about *bei* constructions, I have shown that syntactic, semantic and pragmatic information interacts in the formation

and interpretation of this special grammatical structure. I have argued that unlike its variants *rang*, *jiao* and *gei* which can still be employed as verbs with independent meanings, the morpheme *bei* has been grammaticalised from a lexical category into a functional category, precisely a voice particle who consistently signals that the preceding argument is the passive recipient of the action. By virtue of this peculiar function, *bei* has been uncontroversially regarded as the marker of passives although it is very controversial when it comes to the question of what this marker really is. From the typological point of view, *bei* constructions as passives can be classed as pragmatic voice due to the nature of its pragmatic salience; from the functional point of view, *bei* constructions basically share certain similarities with topic constructions both in syntax and semantics.

Technically, I have attributed the *bei* construction to left-peripheral phenomena, and have defined a principled approach in terms of the linked structure into which an unfixed node can be introduced. Specifically, the pre-*bei* constituent as a left-dislocated argument invariably projects an unfixed node with a locational requirement, and is linked onto a type-*t*-requiring structure. Under the dynamic approach, I have successfully characterised the structural properties of *bei* constructions of various patterns in a straightforward way, unlike other analyses in which arbitrary stipulations have often been made in a costly way. The successful characterisation of this grammatical construction has demonstrated how syntax, semantics and pragmatics go hand in hand in the interpretive process of natural language. This naturally strengthens our stance that the dynamics of natural language understanding can be reflected in grammar formalisms.

Chapter 5

The Emphatic Construction

5.1 Introduction

In the preceding two chapters, I have looked at the left boundary of the Chinese clause and have provided two forms of analyses employing the DS concepts of LINKed structures and unfixed nodes for topic constructions and passive constructions, which both have been shown to display left-periphery effects. In this chapter, I continue to look at the left boundary of the Chinese clause and explore another well-known grammatical construction — the emphatic construction, which is manifested in the form of *shi...de* where *shi* is generally considered a copula when appearing in other constructions, corresponding to ‘be’ in English, and *de* is a multi-function particle which is generally employed as a modificational marker when occurring in a nominal phrase, as shown in previous chapters.¹

As we shall see, the emphatic construction in Chinese displays the same, albeit sort of covert, left-periphery effects as topic and passive constructions in which a constituent dislocated at the outset is overtly presented, either morphologically marked by a pause particle as in topic structure or the voice particle *bei* as in passive structure or phonologically indicated by a pause tone. As I shall demonstrate, the pre-

¹ Basically, the copular verb *shi* in Chinese functions in the same fashion as its counterpart *be* in English except that it does not have the grammaticalised uses of *be* in passive and progressive constructions. For example, it can appear in predicative constructions as in (i), equative constructions as in (ii), presentational constructions as in (iii), pseudocleft construction as in (iv) and so on. Consider the following English-Chinese pairs:

- (i) *Mary is British /a student.*
Mali shi Yingguoren /yi-ge xuesheng.
- (ii) *The student is Mary.*
na-ge xuesheng shi Mari.
- (iii) *it's Mary.*
shi Mali.
(Note: Chinese lacks expletive pronouns:)
- (iv) *What Mary wants is a good job.*
Mali yao de shi yi-fen hao gongzuo.
(Note: Chinese lacks relative pronouns. Here *de* functions as a relative marker.)

shi element in most of the emphatic sentences is dislocated at the left periphery, functioning as the topic of the sentence containing a post-*shi* constituent which receives a focus interpretation.

The organisation of this chapter is as follows. To begin with, I introduce the structural properties of the *shi...de* sentence and show how it is related to a canonical sentence. I then differentiate between the emphatic structure and another construction which may be confused with it. A critical review of previous analyses is provided in section 5.2. Following the critical review is my preliminary analysis of the construction at issue in section 5.3, which provides a basis for the characterisation of this problematic structure within the DS framework. In section 5.4, I provide a formal analysis that captures the generalisations established in the previous section. Section 5.5 summarises.

The emphatic construction can be illuminated by a comparison of (5.1), a complete canonical sentence and (5.2), a set of sentences where bold face represents the emphasised constituent which usually takes emphatic stress and hence receives a focus reading.² As usual parentheses indicate optionality.³

(5.1) *Wangwu zuotian zai jiuba jian le/guo Lisi.*⁴

Wangwu yesterday in pub see PFV/EXP Lisi

² In Chapter 3, the term 'focus' is defined as an update term as opposed to the term 'topic' which is defined as a given term. Specifically, unlike topic which provides a context in which a proposition is constructed, focus updates a propositional structure. Given that linguists use 'focus' on different occasions with different meanings, it seems problematic to give a universal definition of the term. Unfortunately, I have the same problem with the description of the Chinese emphatic construction. Therefore, it should be pointed out that the term 'focus' used in this chapter is a pragmatic notion, because the focus interpretation in the emphatic construction is achieved mainly through pragmatic means, rather than syntactic means as in the focus construction which will be dealt with in Chapter 6.

³ Here the glossing of *shi* and *de* as SHI and DE follows the common practice in the current literature, though as I shall argue in the subsequent sections, the *shi* in the emphatic construction is still the copular verb *shi* 'be' which is not glossed in the same way when it appears elsewhere in the dissertation.

⁴ In sentences like (5.1), one point to note is that temporal expressions like *zuotian* 'yesterday', *jintian* 'today', *mingtian* 'tomorrow', and locative expressions like *zai jiuba* 'in the pub' can appear either in the sentence-initial position or the immediate post-subject position. Another point to note is that the perfective aspect marker *le* and the experiential aspect marker *guo* in Chinese, which correspond to the past tense and perfect tense forms in English respectively, can in general be interchangeably used if the relevant sentence also contains a temporal expression.

‘Wangwu met Lisi in the pub yesterday.’

- (5.2) a. *shi* **Wangwu** *zuotian* *zai jiuba jian* (*le/guo*) *Lisi de*.
 SHI Wangwu yesterday in pub see PFV/EXP Lisi DE
 ‘it was Wangwu that saw Lisi in the pub yesterday.’
- b. *Wangwu shi* **zuotian** *zai jiuba jian* (*le/guo*) *Lisi de*.
 Wangwu SHI yesterday in pub see PFV/EXP Lisi DE
 ‘It was yesterday that Wangwu saw Lisi in the pub.’
- c. *Wangwu zuotian* *shi* **zai jiuba jian** (*le/guo*) *Lisi de*.
 Wangwu yesterday SHI in pub see PFV/EXP Lisi DE
 ‘It was in the pub that Wangwu met Lisi yesterday.’
- d. *Wangwu zuotian* *zai jiuba shi* **jian** (*le/guo*) *Lisi de*.
 Wangwu yesterday in pub SHI see PFV/EXP Lisi DE
 ‘Wangwu did **meet** Lisi in the pub yesterday.’
- e. *Wangwu zuotian* *zai jiuba shi* *jian* (*le/guo*) **Lisi de**.
 Wangwu yesterday in pub SHI see PFV/EXP Lisi DE
 ‘It was Lisi that Wangwu met in the pub yesterday.’
- f. *Wangwu zuotian* *zai jiuba shi* **jian** (*le/guo*) *Lisi de*.
 Wangwu yesterday in pub SHI see PFV/EXP Lisi DE
 ‘Wangwu did **meet** **Lisi** in the pub yesterday.’
- g. *shi* **Wangwu** *zuotian* *zai jiuba jian* (*le/guo*) *Lisi de*.
 SHI Wangwu yesterday in pub see PFV/EXP Lisi DE
 ‘It was the case that Wangwu met Lisi in the pub yesterday.’

As indicated by bold face, any constituent can be emphasised.⁵ In (5.2a), the emphasis is placed on the subject NP *Wangwu*; in (5.2b) the temporal expression *zuotian*; in (5.2c) the locative expression *zai jiuba*; in (5.2d) the verb *jian* (*le/guo*); in

⁵ It should be pointed out that although most of the emphatic sentences in Chinese can be translated into a cleft construction in English, the former, but not the latter, can have a manner adverb in focus, as shown below.

- (i) *Wangwu hen renzhendi piping le Lisi*.
 Wangwu very seriously criticise PFV Lisi
 ‘Wangwu criticised Lisi seriously.’
- (ii) *Wangwu shi hen renzhendi piping le Lisi de*.
 Wangwu SHI very seriously criticise PFV Lisi DE
 *‘it was seriously that Wangwu criticised Lisi.’

I am thankful to Keith Mitchell (p.c.) for pointing out this to me.

(5.2e) the object NP *Lisi*; in (5.2f) the whole VP *jian (le/guo) Lisi*; Interestingly, (5.2g) has a whole sentence emphasised.

Although most of the Chinese emphatic sentences functionally correspond to an English cleft construction as shown by the translations, they differ in that only in the English case is there syntactic reordering. Obviously, the emphasised or focused element in Chinese remains in situ. That is, *shi* is simply inserted immediately before the intended focus and *de* in the sentence-final position, without changing the word order of the relevant sentence. This is however not the whole story, because the realisation of the emphatic construction in Chinese is not only through the occurrence of *shi* and *de*, but also through the phonological or prosodic prominence of the intended focus. In actual speech, the emphasised expression usually takes an emphatic stress as in (5.2a-e) which can be said to have a 'narrow focus', or shows some prosodic changes as in (5.f-g) which can be said to have a 'broad focus' (see Ladd 1980).⁶

There are a number of things about the examples just given that need further clarification. Firstly, one may naturally raise a question concerning (5.2e): when the object NP is emphasised, does *shi* have to appear immediately preceding the verb, or can it occur immediately before the object NP? The answer is the former. Compare (5.3a), a shortened form of (5.1), and (5.3b) where the object NP remains in the

⁶ There appears to be some fluctuation in the intuition of the native speakers queried by the author. Although all speakers insist that the intended focus expressions in sentences such as (5.2d-f) have to be intensely stressed, some of them say that the post-*shi* constituents in sentences such as (5.2a-c) do not always have to be, though they are generally uttered more clearly than their neighbouring words, which implies that some post-*shi* elements, but perhaps not all, can take a weak stress. Whether the post-*shi* expression takes a strong stress or a weak one seems to be a matter of pragmatics. For instance, a strong stress on *zuotian* 'yesterday' in B of (i) might not be indispensable, because the speaker assumes that the hearer can identify what is in focus with the help of the context.

- (i) A: *Wangwu shenme shihou (Foc) jian le/guo Lisi?*
 Wangwu what time see PFV/EXP Lisi
 'When did Wangwu meet Lisi?'
 B: *Wangwu shi zuotian jian (le/guo) Lisi de.*
 Wangwu SHI yesterday see PFV/EXP Lisi DE
 'It was yesterday that Wangwu met Lisi.'
 C: *zuotian.*
 yesterday

In addition, the difference between B and C, as will be discussed later, is that the former serves as affirmation of a certain proposition through the use of *shi...de*, whereas the latter just provides some new information. In the case of (5.2g) where the emphasis is a whole clause, not every word needs to be phonologically marked, though there are certainly prosodic changes.

canonical postverbal position.

(5.3) a. *Wangwu jian le/guo Lisi.*

Wangwu see PFV/EXP Lisi

‘Wangwu met/has met Lisi.’

b. **Wangwu jian (le/guo) shi Lisi de.*

Wangwu see PFV/EXP SHI Lisi DE

This immediately raises the question of why *shi* can occur immediately before any constituent except the object expression? This exception is taken as a mystery by some researchers (e.g. Teng 1979, Shi 1994, Hedberg 1999). If we could ignore the exception, we might tend to assume that *shi* in the emphatic construction is a focus marker, since in other cases it just appears before the emphasised constituent. Certainly, this particular exception is a piece of significant evidence that the copula *shi* has not been grammaticalised as a focus particle. I shall come back to this issue in section 5.3.1.

Of course it is possible to explicitly focus the object NP through syntactic reordering. There is in fact a grammatical construction in Chinese which can explicitly make the syntactic element in question the focus of attention, and in so doing it has to tweak the syntactic structure of the relevant sentence. We may call this type of structure a focus construction, for the syntactic reason that compared with the emphatic construction where the focused expression remains in situ, it makes the focused expression easily identifiable due to its right-periphery effects. Consider (5.4) where both the object and subject NPs in the canonical sentence (5.3) are dislocated to the right periphery and placed immediately after the copular verb *shi*.

(5.4) a. *Wangwu jian guo de shi Lisi.*

Wangwu see EXP DE SHI Lisi

‘Who Wangwu met is Lisi.’

b. *jian guo Lisi de shi Wangwu.*

see EXP Lisi DE SHI Wangwu

‘Who met Lisi is Wangwu.’

As a matter of fact, the focus effect of the post-*shi* elements in emphatic sentences like (5.2) with the exception of the verb, the verb phrase and sentence focus can also be achieved by means of this right-dislocation structure. I shall explore the syntactic and semantic properties of sentences like (5.4) in the next chapter, in virtue of its right-dislocation nature.⁷

Secondly, to have an adequate description of the construction at issue, we need to clarify what is a real emphatic structure, because sometimes it is problematic to identify a particular sentence as an emphatic construction. One of the problems with the identification of the emphatic construction is that on the one hand, the other is optional if one of the two morphemes *shi* and *de* is present, and on the other hand, the syntactic position of *de* is fairly flexible. For instance, either of the two morphemes in emphatic sentences like (5.2) can be omitted, which would not result in ungrammaticality, as exhibited in (5.5)-(5.11) where, as in (5.2), bold-faced expressions in the (a) and (b) sentences usually bear emphatic stress. In these sentences *de* can occur in the immediate postverbal position, as illustrated in the (c) sentences,⁸ as well as in the sentence-final position, as already demonstrated above.

(5.5) a. (*shi*) **Wangwu** *zuotian zai jiuba jian le/quo Lisi de.*

SHI Wangwu yesterday in pub see PFV/EXP Lisi DE
'it was Wangwu that met Lisi in the pub yesterday.'

b. *shi* **Wangwu** *zuotian zai jiuba jian le/quo Lisi (de).*

SHI Wangwu yesterday in pub see PFV/EXP Lisi DE
'it was Wangwu that met Lisi in the pub yesterday.'

c. *shi* **Wangwu** *zuotian zai jiuba jian de Lisi.*

SHI Wangwu yesterday in pub see DE Lisi
'it was Wangwu that met Lisi in the pub yesterday.'

⁷ In the current literature, a few authors (e.g. Hashimoto, 1969, Cheng 1983, Hedberg 1999) employ terminologies like cleft and pseudocleft to describe the emphatic construction such as (5.2) and the focus construction such as (5.4). While it is reasonable to use the term 'pseudocleft', it is misleading to use the term 'cleft', since the emphatic structure in Chinese does not involve syntactic reordering. I use these terms in this chapter just for convenience of discussion.

⁸ Notice that the aspect marker cannot cooccur with *de* when the latter appears in the immediate postverbal position. Some researchers (e.g. Teng, 1979, J. Huang 1982, Cheng 1983, Shi 1994) propose that *de* is an aspect particle. As will be discussed later, this proposal cannot account for the cooccurrence of an aspect marker and *de* when the latter occurs in the sentence-final position as in (5.2a-g).

- (5.6) a. *Wangwu (shi) zuotian zai jiuba jian le/guo Lisi de.*
 Wangwu SHI yesterday in pub see PFV/EXP Lisi DE
 'It was yesterday that Wangwu met Lisi in the pub.'
- b. *Wangwu shi zuotian zai jiuba jian le/guo Lisi (de).*
 Wangwu SHI yesterday in pub see PFVEXP Lisi DE
 'It was yesterday that Wangwu met Lisi in the pub.'
- c. *Wangwu shi zuotian zai jiuba jian de Lisi.*
 Wangwu SHI yesterday in pub see DE Lisi
 'It was yesterday that Wangwu met Lisi in the pub.'
- (5.7) a. *Wangwu zuotian (shi) zai jiuba jian le/guo Lisi de.*
 Wangwu yesterday SHI in pub see PFV/EXP Lisi DE
 'It was in the pub that Wangwu met Lisi yesterday.'
- b. *Wangwu zuotian shi zai jiuba jian le/guo Lisi (de).*
 Wangwu yesterday SHI in pub see PFV/EXP Lisi DE
 'It was in the pub that Wangwu met Lisi yesterday.'
- c. *Wangwu zuotian shi zai jiuba jian de Lisi.*
 Wangwu yesterday SHI in pub see DE Lisi
 'It was in the pub that Wangwu met Lisi yesterday.'
- (5.8) a. *Wangwu zuotian zai jiuba (shi) jian le/guo Lisi de.*
 Wangwu yesterday in pub SHI see PFV/EXP Lisi DE
 'Wangwu did **meet** Lisi in the pub yesterday.'
- b. *Wangwu zuotian zai jiuba shi jian le/guo Lisi (de).*
 Wangwu yesterday in pub SHI see PFV/EXP Lisi DE
 'Wangwu did **meet** Lisi in the pub yesterday.'
- c. *Wangwu zuotian zai jiuba shi jian de Lisi.*
 Wangwu yesterday in pub SHI see DE Lisi
 'Wangwu did **meet** Lisi in the pub yesterday.'
- (5.9) a. *Wangwu zuotian zai jiuba (shi) jian le/guo Lisi de.*
 Wangwu yesterday in pub SHI see PFV/EXP Lisi DE
 'It was Lisi that Wangwu met in the pub yesterday.'
- b. *Wangwu zuotian zai jiuba shi jian le/guo Lisi (de).*
 Wangwu yesterday in pub SHI see PFV/EXP Lisi DE
 'It was Lisi that Wangwu met in the pub yesterday.'
- c. *Wangwu zuotian zai jiuba shi jian de Lisi.*

- Wangwu yesterday in pub SHI see DE Lisi
 'It was Lisi that Wangwu met in the pub yesterday.'
- (5.10) a. *Wangwu zuotian zai jiuba (shi) jian le/guo Lisi de.*
 Wangwu yesterday in pub SHI see PFV/EXP Lisi DE
 'Wangwu did **meet** **Lisi** in the pub yesterday.'
- b. *Wangwu zuotian zai jiuba shi jian le/guo Lisi (de).*
 Wangwu yesterday in pub SHI see PFV/EXP Lisi DE
 'Wangwu did **meet** **Lisi** in the pub yesterday.'
- c. *Wangwu zuotian zai jiuba shi jian de Lisi.*
 Wangwu yesterday in pub SHI see DE Lisi
 'Wangwu did **meet** **Lisi** in the pub yesterday.'
- (5.11) a. *(shi) Wangwu zuotian zai jiuba jian le/guo Lisi de.*
 SHI Wangwu yesterday in pub see PFV/EXP Lisi DE
 'It was indeed the case that Wangwu met Lisi in the pub yesterday.'
- b. *shi Wangwu zuotian zai jiuba jian le/guo Lisi (de).*
 SHI Wangwu yesterday in pub see PFV/EXP Lisi DE
 'It was indeed the case that Wangwu met Lisi in the pub yesterday.'
- c. *shi Wangwu zuotian zai jiuba jian de Lisi.*
 SHI Wangwu yesterday in pub see DE Lisi
 'It was indeed the case that Wangwu met Lisi in the pub yesterday.'

Thirdly, we have another problem with the identification of a particular sentence as the emphatic construction. That is, sometimes it is problematic to determine whether a sentence containing the two elements *shi* and *de* is an emphatic structure or an equative structure. Consider the following examples (5.12)–(5.13) which according to the literature have two possible interpretations, one emphatic reading as in the (a) sentence where *shi...de* is glossed as SHI...DE, and one equative reading as in the (b) sentence where *shi...de* is glossed as SHI...REL since the post-*shi* string is treated as a headless relative clause with *de* functioning as a nominaliser or specifically a relativiser.⁹

⁹ In the literature, a few authors (e.g. Hashimoto, 1969, Cheng 1983, Hedberg 1999) propose that the equative reading in sentences like (5.12b)–(5.13b) involves a headless relative clause with *de* as a nominaliser or relativiser, which is why I gloss *shi...de* as SHI...REL.

(Hashimoto 1969)

- (5.12) a. *ta shi cong Riben lai de.*
3SG SHI from Japan come DE
'It is from Japan that he came.'

- b. *ta shi cong Riben lai de ø.*
3SG SHI from Japan come REL
'He is someone from Japan.'

(Cheng 1983)

- (5.13) a. *zidian shi ta yao de.*
dictionary SHI 3SG want DE
'It is he who wants the dictionary.'

- b. *zidian shi ta yao de ø.*
dictionary SHI 3SG want REL
'The dictionary is the thing/what he wants.'

Given that all language is used in context, we can only differentiate an emphatic construction from a non-emphatic construction with reference to the relevant discourse context. The naturally occurring contexts for (5.12a)-(5.13a), for instance, should be something like (5.14)-(5.15), where the bold-faced expressions usually have emphatic stress.

- (5.14) A: *nawei fayanren lai zi Zhongguo ma?*
that-CL speaker come from China Q
'Did the speaker come from China?'

- B: *bu shi. ta shi **cong Riben lai** de.*
not SHI 3SG SHI from Japan come DE
'No, it is from Japan that he came.'

- (5.15) A: *ni yao zidian ma?*

2SG want dictionary Q
'Do you want the dictionary?'

- B: *wo bu yao. zidian shi **ta** yao de.*
1SG not want dictionary SHI 3SG want DE
'No, I don't. It is he who wants the dictionary.'

The appropriate contexts for (5.12b)-(5.13b) should be something like (5.16)-(5.17), where the pre-*shi* elements are usually pronounced with prominence. As for the post-*shi* elements, they certainly do not take an emphatic stress, because otherwise the resulting sentences would sound pragmatically infelicitous.¹⁰

(5.16) A: *ni shi cong Riben lai de xuezhe ba?*

2SG SHI from Japan come REL scholar PAR

'Are you the scholar from Japan?'

B: *wo bu shi. ta shi cong Riben lai de.*

1SG not SHI 3SG SHI from Japan come REL

'No, I am not. He is someone from Japan.'

(5.17) A: *zhexie dou shi ta yao de dongxi ma?*

these all SHI 3SG want REL thing Q

'Are all these the stuff he wants?'

B: *bushi. (zhiyou) zidian shi ta yao de.*

no only dictionary SHI 3SG want REL

'No. (Only) the dictionary is the thing or what he wants.'

Also as noted above, either *shi* and *de* in the emphatic sentence can be omitted and the resulting sentence is still grammatical. This always holds for sentences like (5.12a)-(5.13a), but it is not true for sentences like (5.12b)-(5.13b): in the latter ones both *shi* and *de* are generally obligatory. This issue will be discussed in greater detail in the following sections.

Last but not the least, the greatest number of the emphatic constructions in Chinese, according to Hedberg 1999's research, is the subject focus which takes up one third of the data she has collected. More significantly, the subject expression is in general

¹⁰ This does not mean that phonological evidence should be taken as the criterion for judging whether a sentence is an emphatic construction or not. It is also possible to have the post-*shi* elements with stress even in the equative reading. For example, in the following context, the PP in the equative sentence (5.12b) can also be stressed.

(i) A: *ta shi cong Zhongguo lai de xuezhe ma?*

3SG SHI from China come REL scholar Q

'Is he the scholar from China?'

B: *bu shi. ta shi cong Riben lai de.*

not SHI 3SG SHI from Japan come REL

'No, he's someone from Japan.'

preceded by a constituent that is interpreted as the topic of the sentence, as already shown in (5.13). This is also true of the sentence focus. Consider the following sentences which Hedberg collected from a famous Chinese novel *Wei Cheng* 'Besieged City'.¹¹

(5.18) *zhe shi ni hai wo de.*

this SHI 2SG harm 1SG DE

'As for this, it is you who affect me.'

(5.19) *zhe-ge zi shi youren zai shenme shu shang kanjian le gaosu*

this-CL word SHI someone LOC what book on see PFV tell

Bertie, Bertie gaosu wo de.

Bertie Bertie tell 1SG DE

'As for this word, it was the case that someone saw it from some book and told Bertie, then Bertie told me.'

Discourse-pragmatically, sentences with a subject focus and a sentence focus such as (5.2a) and (5.2g) are preferably presented as in (5.20)-(5.21) below, where the pre-*shi* material is also construed as the topic expression that sets the frame of reference within which the post-*shi* predication holds.

(5.20) a. *Lisi shi Wangwu zuotian zai jiuba jian de.*

Lisi SHI Wangwu yesterday in pub see DE

'As for Lisi, it was Wangwu that met him in the pub yesterday.'

b. *zuotian shi Wangwu zai jiuba jian Lisi de.*

yesterday SHI Wangwu in pub see Lisi DE

'Yesterday, it was Wangwu that met Lisi in the pub.'

c. *zuotian zai jiuba shi Wangwu jian Lisi de.*

yesterday in pub SHI Wangwu see Lisi DE

'Yesterday, in the pub, it was Wangwu that met Lisi.'

(5.21) a. *Lisi shi Wangwu zuotian zai jiuba jian de.*

Lisi SHI Wangwu yesterday in pub see DE

¹¹ Here I have made some modifications to Hedberg's translations in which she did not show that the pre-*shi* constituent in sentences of this sort is the topic expression, although she discussed its topical properties in her paper.

‘As for Lisi, it is true that Wangwu met him in the pub yesterday.’

- b. *zuotian shi Wangwu zai jiuba jian Lisi de.*

yesterday SHI Wangwu in pub see Lisi DE

‘Yesterday, it is true that Wangwu met Lisi in the pub.’

- c. *zuotian zai jiuba shi Wangwu jian Lisi de.*

yesterday in pub SHI Wangwu see Lisi DE

‘Yesterday, in the pub, it is true that Wangwu met Lisi.’

As I shall discuss shortly, the pre-*shi* constituent consistently shows topical properties in contrast to the focal properties of the post-*shi* constituent, and hence most of the emphatic sentences display left-periphery effects, though in a sort of covert fashion, as opposed to the topic sentences dealt with in Chapter 3 which display left-periphery effects in an obvious way.

5.2 Previous Analyses

I began the preceding section with a detailed description of the construction at issue with a view of showing the degree to which it is problematic. As a matter of fact, the inherent difficulties of this problematic construction have caused a lot of disagreement, as can be evidenced by a variety of analyses with respect to the two morphemes *shi* and *de*, and the clause structure. I am going to offer a critical review of two different analyses that have been proposed.

5.2.1 Biclausal Approach

This line of analysis was first suggested by Hashimoto (1969) and then developed by C. Li & Thompson (1981). Following Chao (1968) who proposes that the word *shi*, whether in the *shi...de* or non-*shi...de* construction, is always a copular verb and *de* is a double-function nominaliser: one a ‘specifying DE’, and the other a ‘restrictive DE’, Hashimoto claims that sentences like (5.12a-b), repeated here as (5.22a-b), have distinct underlying structures: one is given in (5.22c) which has an emphatic reading with *de* analysed as a non-relative particle of some unspecified kind, and the other in (5.22d) which has an equative reading with *de* construed as a relative particle completing a headless relative clause.

(Hashimoto 1969)

(5.22) a. *ta shi cong Riben lai de.*

3SG SHI from Japan come DE

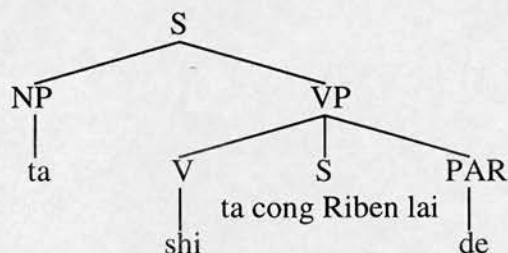
'It is from Japan that he came.'

b. *ta shi cong Riben lai de ø.*

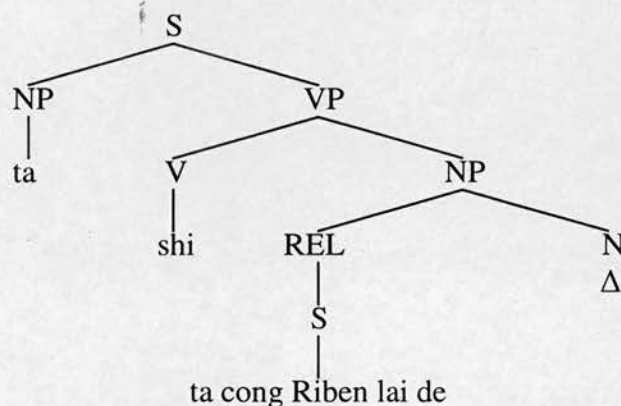
3SG SHI from Japan come REL

'He is someone from Japan.'

c.



d.



Both the underlying structures represented in (5.22c-d) require deletion of the subject *ta* 's/he', possibly via equi-NP deletion. Although Hashimoto does not discuss the distinction between the emphatic construction and the non-emphatic construction, she suggests that as far as the emphatic construction is concerned, the whole construction brings into focus the elements enclosed by *shi...de*.

Hashimoto analyses the emphatic or *shi...de* construction as composed of two clauses as shown in (5.22c) above, that is, a main clause where the copula *shi* serves as the matrix verb, and a nominalised clause marked by the particle *de*. Also for her, the syntactic scope of focus in the emphatic construction is between *shi* and *de*, which is correct, since as illustrated in (5.2a-g), all the focused expressions fall between the two morphemes, and the locus of the intended focus is pragmatically

determined, given that any constituent can be emphasised in the emphatic construction.

There are however some problems with Hashimoto's biclausal analysis. As mentioned above, she follows Chao's analysis of *de* as invariably a nominaliser but with two different functions, and treats the *de* in the *shi...de* construction as a non-relative particle nominalising a clause, but this seems in conflict with the structure she assigns, where *de* does not form a constituent with the clause it is 'nominalising'. Moreover, Hashimoto's analysis of the post-*shi* string as a nominalised clause cannot account for at least two phenomena. Firstly, it cannot provide a good explanation of the optionality of *de*. As illustrated in (5.5)-(5.11) in section 5.1, the omission of *de* does not affect the grammaticality of the resulting sentence. This also holds for emphatic sentences like (5.12a) and (5.13a).

(5.23) *ta shi cong Riben lai (de).*

3SG SHI from Japan come DE

'It is from Japan that he came.'

(5.24) *zidian shi ta yao (de).*

dictionary SHI 3SG want DE

'It is he who wants the dictionary.'

Compare with (5.25)-(5.26), where *de* is obviously a nominaliser. The omission of *de* in this sort of sentences is definitely ungrammatical, which makes the analysis of *de* in the emphatic construction as a nominaliser highly doubtful.

(5.25) a. *Lisi xihuan Yingguoren chuan de, bu xihuan tamen chi de.*

Lisi like Britons wear DE not like 3PL eat DE

'Lisi likes what Britons wear, but not what they eat.'

b. **Lisi xihuan Yingguoren chuan, bu xihuan tamen chi.*

Lisi like Britons wear not like 3PL eat

(5.26) a. *Wangwu biaoyang de shi Lisi, piping de shi Zhangsan.*

Wangwu praise DE SHI Lisi criticise DE SHI Zhangsan

'Who Wangwu praised is Lisi; who he criticised is Zhangsan.'

b. **Wangwu biaoyang shi Lisi, piping shi Zhangsan.*

Secondly, the construal of the post-*shi* string as a nominalised clause cannot provide a good explanation of the occurrence of an aspect marker in the post-*shi* string when *de* is omitted, as shown in (5.5b)-(5.11b). Furthermore, there is also an obvious problem for this biclausal approach in that there is no obvious way to get word orders like (5.5c)-(5.11c), where *de* occurs before the object NP.

Hashimoto's biclausal approach to the *shi...de* construction has been adopted by C. Li & Thompson (1981). Like Hashimoto (1969), they consider *shi* a copular verb, but unlike Hashimoto, they do not postulate ambiguity for *de*; according to them, it is invariably a nominaliser. Accordingly, C. Li & Thompson employ a simple equative structure to schematise the *shi...de* construction as *subject shi nominalisation*. Furthermore, in contrast to the common practice of treating the constituent between *shi* and *de* as being emphasised, they propose that the general idea of emphasis should be refined, because 'the *shi...de* construction serves to characterise or explain a situation by affirming or denying some supposition, as opposed to simply reporting an event.'

Thus, their translation of the *shi...de* construction does not show any sign of English cleft construction, which as pointed out by Hedberg (1999) is probably a consequence of their reluctance to consider the emphasised element as part of the main clause. To illustrate their argument, they contrast the following pair of sentences.

(C. Li & Thompson 1981)

(5.27) a. *ta shi zuotian lai de.*

3SG be yesterday come NOM

'The situation is that s/he came yesterday.'

b. *ta zuotian lai le.*

3SG yesterday come PFV

'S/he came yesterday.'

According to C. Li & Thompson (1981: 590), the fundamental functional difference between (5.27a) and (5.27b) is that the former explains a situation, whereas the latter describes an action, which I think is correct. They then propose that this functional difference should be made with reference to a certain discourse context, which is also correct, as already discussed in section 5.1. They provide the following pair of questions as the appropriate contexts in which the above pair of sentences would be used, with the first one demanding an explanation of a situation and the second one requiring information about an event.

(5.28) a. Why couldn't s/he speak English?

yinwei ta (shi) zuotian lai de.

because 3SG be yesterday come NOM

'Because the situation is that s/he came yesterday.'

(the optionality of *shi* is indicated by the original authors)

b. Has s/he arrived yet?

ta zuotian lai le.

3SG yesterday come PFV

'S/he came yesterday.'

C. Li & Thompson's explanation has a number of flaws. Firstly, to explain a certain situation is not contradictory to placing emphasis on some information. In the answer to question (5.28a), for instance, the temporal expression *zuotian* 'yesterday' appears to be most prominent in terms of informational value, because it gives the reason why the person being talked about couldn't speak English, namely due to a very short period of time. To show the emphatic nature of the construction at issue, we can provide a larger discourse context in which C. Li & Thompson's example (5.27a) naturally occurs.

(5.29) A: *ta he ni yiqi lai le ma?*

3SG with 2SG together come PFV Q.

'Did he come together with you?'

B: *meiyou. ta shi zuotian lai de. wo shi jintian lai de.*

no 3SG SHI yesterday come DE 1SG SHI today come DE

'No. It was yesterday that he came; it was today that I came.'

Clearly, speaker B explains the situation by presenting two different times, *zuotian* and *jintian*, which as contrastive focus are usually pronounced with prominence. Actually, the emphatic sentence (5.27a) can also be used as an appropriate answer to a question like (5.30), where *de*, as will be discussed in section 5.3, makes the sentence have a definitive tone,¹² namely the coming action did happen at a certain time which requires to be confirmed.

(5.30) a. *ta shenme shihou lai de?*

3SG what time come DE

‘When did he come?’

This shows that the *shi...de* construction does serve as confirmation of some supposition, as C. Li & Thompson claimed. Also as will be discussed later, the affirmative function of the emphatic construction is presumably related to the copula *shi*. To have a precise description of the *shi...de* construction as functioning as an emphatic structure, we would have to refine C. Li & Thompson’s idea as follows:¹³

(5.30) *The function of the shi...de construction:*

the *shi...de* construction serves as affirming some supposition by emphasising one of the constituents or the whole string in the scope of *shi...de*.

Secondly, there is one more problem with C. Li & Thompson’s biclausal approach, apart from the problems facing Hashimoto’s analysis. As mentioned above, they

¹² As pointed out by Yuan (2003), the occurrence of the particle *de* at the sentence-final position endows the relevant sentence with a tone of evidentiality.

¹³ C. Li & Thompson give examples like the following for a justification of their claim that the *shi...de* construction also serves to deny some supposition.

(i) *women (shi) bu hui qifu nimen de.*

we be not likely bully you(PL) NOM

‘The situation is that we aren’t going to bully you.’

Actually, the above *shi...de* sentence still functions as confirmation. Specifically, the speaker uses it to assure the hearers that there is no likelihood of bullying them. Therefore, the *shi...de* construction invariably has the affirmative function, not the denial function.

schematise the *shi...de* construction as *subject shi nominalisation*, an equative structure. At the same time, they wholly agree that the morpheme *shi* in this type of construction can always be omitted (Li & Thompson, 1981: 588), as shown in their own example (5.28a). We doubt very much that a string in the form of *subject nominalisation* can guarantee grammaticality all the time, though in very colloquial registers a string composed of a subject NP and a nominal(ised) expression might be acceptable, as illustrated in (5.32a).

(Chao 1968)

(5.32) a. *ta taitai (shi) meiguoren.*

3SG wife SHI American

‘His wife is American.’

b. *Lisi ?*(shi) jiao shu de.*

Lisi SHI teach book DE

‘Lisi does the teaching job.’

c. *Lisi *(shi) yige jiao shu de.*

Lisi SHI one teach book DE

‘Lisi is a teacher.’

The fact that *de* in the emphatic structure is optional and an aspect marker is allowed to occur in the post-*shi* string with the absence of *de* leads us to the conclusion that the *shi...de* sentence as an emphatic construction does not involve nominalisation (see section 5.3.2 for further discussions of this issue).

5.2.2 Monoclausal Approach

The linguistic literature concerning the analysis of the emphatic construction has seen a transition from a biclausal approach to a monoclausal one. Specifically, there are two lines of analysis under the monoclausal approach, namely that *shi...de* construction is an adverbial focus construction and that it is a modal construction. Advocates of the first line of analysis believe that *shi* is a focus or an adverbial focus marker while those of the second line of analysis insist that it should be a modal verb, but all of them treat *de* in a similar fashion, that is, as a marker of past tense or completive aspect or aspectual-modal or perfective aspect.

The first line of analysis is advocated by Teng (1979) and J. Huang (1982), and the second line of analysis is proposed by Cheng (1983) and Shi (1994) among other authors, all of whom argue against the biclausal approach to the construction at issue, under which the post-*shi* string is analysed as a nominalised clause, as introduced in subsection 5.2.1. To falsify the analysis of the post-*shi* material as a type of nominalisation, they are entirely clear that some work above all has to be done on the nominaliser *de*. If, according to them, *de* in *shi...de* construction is not obligatory as it is in a real nominalised expression as shown in (5.25)-(5.26) respectively, it can then be taken as counterevidence against the treatment of *de* as a nominaliser. It is not difficult to provide the evidence showing the optionality of *de* in the emphatic construction, as illustrated in (5.5b)-(5.11b) the first two of which are repeated as follows.

(5.33) *shi Wangwu zuotian zai jiuba jian le/guo Lisi (de).*

SHI Wangwu yesterday in pub see PFV/EXP Lisi DE

‘it was Wangwu that met Lisi in the pub yesterday.’

(5.34) *Wangwu shi zuotian zai jiuba jian le/guo Lisi (de).*

Wangwu SHI yesterday in pub see PFVEXP Lisi DE

‘It was yesterday that Wangwu met Lisi in the pub.’

To argue against the biclausal approach, though, the next question is: what is the morpheme *de* if it is not a nominaliser? Advocates of the monoclausal approach claim that *de* is a past tense marker (e.g. Teng 1979) or a past tense morpheme (e.g. Simpson and Wu 1999), or a completive aspect marker (e.g. J. Huang 1982), or an aspectual-modal particle (e.g. Cheng 1983) or a perfective aspect marker (e.g. Shi 1994). Their supporting evidence is that like the aspect marker, *de* can occur in the postverbal position, in which case the aspect marker cannot cooccur, as also illustrated in (5.5c)-(5.11c) the first two of which are repeated as follows.

(5.35) *shi Wangwu zuotian zai jiuba jian de Lisi.*

SHI Wangwu yesterday in pub see DE Lisi

‘it was Wangwu that met Lisi in the pub yesterday.’

(5.36) *Wangwu shi zuotian zai jiuba jian de Lisi.*

Wangwu SHI yesterday in pub see DE Lisi

‘It was yesterday that Wangwu met Lisi in the pub.’

Furthermore, J. Huang (1982) provides more evidence for the feasibility of treating *de* as an aspect particle. He shows that like the perfective particle *le*, *de* can even occur as an infix.

(J. Huang 1982)

(5.37) a. *ta shi qunian jie-le-hun.*

he be last year mar-ASP-ry

‘It was last year that he got married.’

b. *ta shi qunian jie-de-hun.*

he be last year mar-ASP-ry

‘It was last year that he got married.’

However, the appearance of *de* in the postverbal position or inside the compound verb is not convincing evidence that it is an aspect marker. If it is really a tense or an aspect particle, an aspect marker is then unlikely to occur in any case. But this is not true. When *de* in (5.35)-(5.36) appears in the sentence-final position, the occurrence of an aspect marker is perfectly acceptable, as shown before and repeated below.

(5.38) *shi Wangwu zuotian zai jiuba jian le/guo Lisi de.*

SHI Wangwu yesterday in pub see PFV/EXP Lisi DE

‘it was Wangwu that met Lisi in the pub yesterday.’

(5.39) *Wangwu shi zuotian zai jiuba jian le/guo Lisi de.*

Wangwu SHI yesterday in pub see PFV/EXP Lisi DE

‘It was yesterday that Wangwu met Lisi in the pub.’

As for J.Huang’s evidence in favour of treating *de* as an aspect particle *le*, it is not convincing at all because they do not behave similarly, if the temporal expression is deleted. As demonstrated in (5.40), with the absence of the time adverbial *qunian* ‘last year’, the sentence with *le* is still perfectly natural, but the one with *de* is hardly acceptable.

(5.40) a. *ta shi jie-le-hun.*

he be mar-ASP-ry

'It was true that he got married.'

b. **ta shi jie-de-hun.*

he be mar-DE-ry

Perhaps the most convincing evidence against the treatment of *de* as a past tense, a completive or a perfective aspect marker is that apart from the perfective aspect marker *le* and the experiential aspect marker *guo*, the durative aspect marker *zai* can also cooccur with *de* in the emphatic structure, as illustrated in (5.41).¹⁴

(5.41) a. *zhe-chang bisai shi Zhangsan zai jieshuo de.*

this-CL match SHI Zhangsan DUR comment DE

'As for this match, it is Zhangsan who is commenting it.'

b. *na-ge xiangmu shi Wangwu zai zuo de.*

that-CL project SHI Wangwu DUR do DE

'As for that project, it is Wangwu who is working on it.'

A consistent account of the emphatic construction therefore does not favour the treatment of *de* as a tense or an aspect particle at all. Apart from the question of *de*, one then has to answer another question, is *shi* still a copula in the emphatic construction? Advocates of the adverbial focus construction claim that *shi* is a focus marker (e.g. Teng 1979) or a focus adverb (e.g. J. Huang 1982), which can be added to the intended focus phrase, whereas advocates of the modal construction claim that it is a modal verb (e.g. Cheng 1983, Shi 1994).

At a first glance, the analysis of *shi* as a focus marker seems appealing, as mentioned in section 5.1. As already noted, most of the focused expressions in the emphatic construction, whether a narrow focus or a broad one, appear in the immediate post-*shi* position. Compared with their position in the canonical sentence, these expressions just remain in situ, with *shi* simply being appended before them. The in-situ characteristic of the focused expression could easily lead to a focus marker

¹⁴ The *de* in both the (a) and (b) sentences in (5.41) can be omitted and the outcome is still perfectly natural, which shows that they are both an emphatic construction, rather than a construction involving nominalisation.

hypothesis, as can also be seen in the current literature (e.g. Xu 2004).

However, such a hypothesis cannot account for the fact that *shi* can never appear immediately before the object NP, which is a piece of significant evidence against the treatment of *shi* as being grammaticalised as a focus particle. Moreover, the absence of *shi* does not result in the disappearance of the focus interpretation under the discourse context, as illustrated in (5.5a)-(5.11a), because focus in Chinese as in English, could be conveyed through intonation alone. In the emphatic construction, the intended focus, which falls within the scope of *shi...de*, is achieved not solely through syntactic means as in the focus construction dealt with in Chapter 6, but usually with the help of phonological cues.¹⁵

Another piece of strong evidence against the analysis of *shi* as a focus marker is that it still maintains verbal properties in that: (i) it is negated like a matrix verb; (ii) it is questioned in the V-not-V form like a matrix verb, which strongly suggests that *shi* in the emphatic construction is not a grammatical word but still a copular verb.¹⁶ Consider the negative and question forms of sentences (5.38)-(5.39).

(5.42) a. *bu shi Wangwu zuotian zai jiuba jian le/guo Lisi de.*

not SHI Wangwu yesterday in pub see PFV/EXP Lisi DE

'it wasn't Wangwu that met Lisi in the pub yesterday.'

b. *shi bu shi Wangwu zuotian zai jiuba jian le/guo Lisi de ?*

SHI not SHI Wangwu yesterday in pub see PFV/EXP Lisi DE

'Was it Wangwu that met Lisi in the pub yesterday?'

(5.43) a. *Wangwu bu shi zuotian zai jiuba jian le/guo Lisi de.*

Wangwu not SHI yesterday in pub see PFV/EXP Lisi DE

'It wasn't yesterday that Wangwu met Lisi in the pub.'

b. *Wangwu shi bu shi zuotian zai jiuba jian le/guo Lisi de.*

¹⁵ As will be discussed in section 5.3.1, the copula *shi* as a pro-predicate is used in the *shi...de* construction to affirm some proposition, which provides a straightforward explanation of why as mentioned in section 5.2.1, some functional linguists like C. Li & Thompson (1981) claim that this construction has an affirmative function.

¹⁶ One may argue that the copula *shi* in the emphatic construction, which can appear in the sentence-initial position as in (5.40), does not behave in exactly in the same fashion as it is in other copular constructions such as predicative, equative, specificational and pseudocleft, where it invariably appears with a NP complement as illustrated in footnote 1. I shall address this issue in section 5.3.

Wangwu SHI not SHI yesterday in pub see PFV/EXP Lisi DE

‘Was it yesterday that Wangwu met Lisi in the pub?’

As for the analysis of *shi* as an adverb, there exists some evidence that it parallels some adverbs in a certain fashion. Adverbs such as *yiding* ‘surely’ and *keneng* ‘possibly’, for example, can in general appear before any constituent except the postverbal object expression. Although they can be inserted in any slot of a canonical sentence like (5.1), repeated here as (5.44a), and can also be negated in the same way as *shi* is, yet it is generally unacceptable for these adverbs to be questioned in the same way as *shi* is, especially when they appear sentence-initially as shown in (5.44b).

(5.44) a. [] Wangwu [] zuotian [] zai jiuba [] jian le/guo Lisi.

Wangwu yesterday in pub see PFV/EXP Lisi

‘Surely/Possibly, Wangwu met Lisi in the pub yesterday.’

b. *?*yiding bu yiding Wangwu zuotian zai jiuba jian le/guo Lisi?*

surely not surely Wangwu yesterday in pub see PFV/EXP Lisi

Those who adopt the second line of analysis explore the possibility of classifying *shi* into other types of verb rather than a copula. Cheng (1983) argues that *shi* is a modal verb and denotes confirmation. Functionally, it is reasonable to assume that *shi* serves as confirming a supposition, roughly as discussed in the preceding subsection. In fact, the best evidence for *shi*’s denoting confirmation is that it is frequently used in an affirmative reply to a yes/no question.

(5.45) A: Wangwu jian guo Lisi ma?

Wangwu see EXP Lisi Q

‘Has Wangwu ever met Lisi?’

B: *shi* (a).

SHI PAR

(5.46) A: *ni zhen yao xue yuyanxue?*

2SG really want study linguistics

‘Do you really want to do linguistics?’

B: *shi* (ya).

As for the evidence for supporting the modal verb analysis, Shi (1994) argues that although modal verbs in Chinese normally occur between the subject and main verb as in (5.47), some other modal verbs can appear in sentence-initial position and also can take the V-not-V form as in (5.48).

(5.47) a. *Zhangsan hui qu Yingguo.*

Zhangsan will go Britain

'Zhangsan will go to the UK.'

b. *Zhangsan hui qu Yingguo ma?*

Zhangsan will go Britain Q

'Will Zhangsan go to the UK?'

(Shi 1994)

(5.48) a. *yinggai Yaoqi qu.*

should Yaoqi go

'It should be the case that Yaoqi goes (there).'

b. *yinggai-bu-yinggai Yaoqi qu?*

should not should Yaoqi go

'Should it or should it not be the case that Yaoqi goes (there)?'

But as pointed out by Cheng (1983), this does not hold for all modal verbs. As a matter of fact, most modal verbs do not behave like *yinggai* in (5.48), but like *hui* in (5.47) which cannot appear in sentence-initial position as shown below, which indicates that it is implausible to analyse *shi* as modal verb.

(5.49) a. **hui Zhangsan qu Yingguo.*

will Zhangsan go Britain

b. **hui Zhangsan qu Yingguo ma?*

will Zhangsan go Britain Q

Although the monoclausal approach is closer to the understanding of the problematic construction at issue, its analyses of *shi* as a focus adverb or a modal verb and *de* as a tense or an aspect particle are far from convincing.

In summary, I conclude that none of the analyses under the two approaches provides a consistent account of the emphatic structure. The optionality of *de* and the allowable occurrence of an aspect marker in the emphatic sentence with the absence of *de* indicate that the morpheme *de* is not a nominaliser and the post-*shi* string is therefore not a nominalisation structure. The cooccurrence of *de* and an aspect marker indicates that the former is not a tense or an aspect marker. The obligatoriness of negating or questioning *shi* if the emphatic sentence has to be translated into a negative one or a question form indicates that it is neither a focus marker nor a focus adverb, but still used as a matrix verb. The impossibility of some modal verbs appearing in sentence-initial position indicates that *shi* is unlikely to be a modal verb. What is reasonable is to assert that *shi* is still employed as a copula and the emphatic construction is still a copular construction.

5.3 Preliminary Analysis

In this section, I provide a preliminary analysis of the emphatic construction which will be used as a basis for the characterisation of this problematic structure. On the basis of the observation and discussion in previous sections, I adopt the position that the *shi...de* construction has a monoclausal structure. In this emphatic structure, the two morphemes *shi* and *de* work hand in hand in the assignment of emphatic or focal effects to certain constituents.

Specifically, *shi* and *de* establish the syntactic scope within which the emphasised constituent or intended focus falls. More specifically, *shi* indicates or asserts that the post-*shi* string, which is completed by *de*, possibly contains some prominent information.¹⁷ As noted in section 5.1, what is emphasised could be a single constituent, the so-called narrow focus; it could also be a whole clause, the so-called broad focus. This hard fact strongly suggests that the focus effect is achieved not entirely through syntactic means, but possibly through the interaction between syntax and pragmatics.

¹⁷ Note that the use of *shi* in Chinese emphatic construction is in spirit similar to that of *be* in English existential focus construction in English except that the former has a cataphoric story while the latter has an anaphoric one. This issue will be discussed shortly.

As mentioned in section 5.1, what is highlighted by speakers is not a matter of grammar but a matter of pragmatics instead, that is, what they are trying to communicate on a specific occasion in a specific context (cf. Ladd 1996). In other words, the focus could be pragmatically located by the speaker or identified by the hearer. In the case of Chinese emphatic construction, focus usually falls on some element in the post-*shi* string completed by *de*, mostly the immediate post-*shi* one which is usually phonologically stressed or prosodically marked.

Given the fact that omission of either *shi* or *de* does not affect the grammaticality of the relevant sentence nor the focus interpretation of the emphasised constituent, we can tentatively make a generalisation about the emphatic construction in Chinese, the scope of focus is a matter of syntax, whereas the location of focus is a matter of pragmatics. Having provided a general analysis of the emphatic construction in question, I shall discuss in what follows its syntactic and semantic properties in greater detail, with special reference to the two morphemes *shi* and *de*.

5.3.1 *The underspecification of 'shi'*¹⁸

To characterise the construction in question, first of all, we have to provide an analysis of *shi*. Granted that *shi* is still a copula, the question still remains as to how to construe it. The problem with analysing this copular verb is that as already illustrated in footnote 1, it appears in a range of constructions which show a variety of interpretations,¹⁹ as well as the emphatic construction at issue. Consider the following examples where the emphatic one has a full clause in focus.

¹⁸ A comprehensive account of the Chinese copula *shi* certainly requires more work. Here I mainly discuss its properties manifested in the emphatic structure. Readers who are interested in the dynamic account of its English counterpart 'be' are referred to Cann (2004).

¹⁹ Unlike its counterpart *be* in English, the copula *shi* in Chinese usually does not take an adjective phrase as its complement. In the following examples, the Chinese sentence (iii) is corresponding to the English one (i), as shown by the translation. Of course, *shi* or *shi...de* can appear with the adjective phrase as in (iv), in which case the resulting sentence is interpreted as an emphatic construction, as also shown by the translation.

- (i) *Mary is very happy.*
- (ii) **Mary very happy.*
- (iii) *Mali hen xingfu.*
Mary very happy
'Mary is very happy.'
- (iv) *Mali shi hen xiangfu (de).*
Mary SHI very happy DE
'It is the case that Mary is very happy.'

- (5.50) *Wangwu shi yi-wei yanyuan.*
 Wangwu SHI one-CL actor
 ‘Wangwu is an actor.’
- (5.51) *Wangwu shi na-wei yanyuan.*
 Wangwu SHI that-CL actor
 ‘Wangwu is the actor.’
- (5.52) *na-wei yanyuan shi Wangwu.*
 that-CL actor SHI Wangwu
 ‘The actor is Wangwu.’
- (5.53) *shi Wangwu jian guo Lisi de.*
 SHI Wangwu see EXP Lisi DE
 ‘It is the case that Wangwu met Lisi.’

Although these copular constructions all contain the copula *shi*, they give rise to different interpretations: the copula induces a predicative reading in (5.50); an equative reading in (5.51); a specificational reading in (5.52); and acts as part of the construction determining focus in (5.53). The variability in interpretation appears to depend crucially on the post-copular expression or string: the predicative clause involves a postcopular indefinite noun phrase; the equative clause involves a postcopular definite noun phrase which appears to be fully referential, while the specificational clause involves an initial definite NP which provides a description of an unknown entity, rather than picking out some specific object; the emphatic clause involves a postcopular full clause which shows some prosodic changes.

The fact that the interpretation of a clause containing *shi* may vary according to the postcopular expression or string indicates that it is dependent on the local linguistic context for its meaning. The context dependence of interpreting the copula strongly suggests that it is semantically underspecified. In other words, it has semantically underspecified content which requires to be (pragmatically) enriched (cf. Cann 2004). The underspecification of *shi* points to a hypothesis that it is a predicate proform which appears to have the characteristics of pronouns. Parallel to a pronoun, *shi* has an anaphoric or expletive function in that it takes its value from context, either from the copular clause itself or from the discourse context.

Note that the anaphoric property of *shi* provides a straightforward account of why *shi* can be employed in an affirmative reply to a general question like (5.45), repeated here as (5.54), where it also appears to be a placeholder whose value is previously established, namely through the parse of the question, and also why *shi* can appear in the initial position of the emphatic sentence (5.53), repeated here as (5.55), where it also appears to be placeholder whose value is subsequently established, namely through the parse of the postcopular clause.²⁰

(5.54) A: *Wangwu jian guo Lisi ma?*

Wangwu see EXP Lisi Q

‘Has Wangwu ever met Lisi?’

B: *shi*.

SHI

(5.55) *shi Wangwu jian guo Lisi de*.

SHI Wangwu see EXP Lisi DE

‘It is the case that Wangwu met Lisi.’

Also note that the anaphoric property of *shi* provides a straightforward account of why its omission in the emphatic construction does not affect the grammaticality of the relevant sentence and the focus effects of the emphasised constituent. As illustrated in (5.2a-g), the copula is, in fact, followed either by a verb phrase as in (5.2b-f) where a temporal, locative, verb, object or a whole verb phrase is in focus respectively, or a complete clause as in (5.2a)-(5.2g) where a subject or a full clause is in focus respectively, both of which contain a constituent that is either phonologically stressed or prosodically marked. The two groups of emphatic clauses can be schematised respectively as in (5.56), where *shi* can be inserted in any of the square brackets and what follows *shi* in any case is a well-formed string.

(5.56) a. {_SWangwu {_{VP}[]*zuotian* []*zai jiuba* []*jian (le/guo)* Lisi} *de*}.

Wangwu yesterday in pub see PFV/EXP Lisi DE

b. {_S[] {[]Wangwu *zuotian zai jiuba jian (le/guo)* Lisi } *de*}.

²⁰ Strictly speaking, the copula *shi* in the emphatic construction is interpreted cataphorically.

One unexpected result of analysing *shi* as a predicate proform is that it provides an adequate explanation of why the copula cannot appear before the object NP, as mentioned in section 5.1. Because *shi* is an anaphor-like predicate, it must occur before a verb phrase even when the object is emphasised. Consider the case where the copula is inserted in the verb phrase as in the form of *V + shi + NP*. From the processing point of view, the transitive verb is parsed first, the lexical actions of which projects the internal argument as well as its own node, a two-place predicate node. Subsequent to the parse of the verb, the parser requires an object NP to decorate the internal argument node. The occurrence of a copula verb fails to fulfill this requirement, as a consequence of which the parse would collapse. Therefore, there is no way for the verb phrase to form a one-place predicate, hence no way for the copula to exercise its anaphoric function.

Another unexpected result of treating *shi* as a predicate pro-form is that it also provides an adequate explanation of why the emphatic construction serves as affirming some supposition, as mentioned in section 5.2. Similar to a pronoun the appearance of which presupposes the existence of some object, the occurrence of *shi* as a predicate proform presupposes the existence of some event and the post-*shi* string asserts or instantiates the existence of the event. This affirmative effect is, of course, achieved dynamically.²¹

Finally, it should be pointed out that the underspecification of the copula *shi* in Chinese is manifested not only in its content but also in its type. As can be seen in (5.50)-(5.53), *shi* in predicative, equative and specificational constructions invariably appears before a NP complement and hence seems to be a one-place predicate, while *shi* in emphatic constructions appears before either a VP or a sentence, and in the latter case it seems to be a term of propositional type.

²¹ The presuppositional effects of the copula will be captured by analysing it as projecting a metavariable whose value is substituted by the logical formula projected by the post-*shi* string, as will be demonstrated in section 5.4.

5.3.2 The evidentiality of 'de'

Let us now turn to *de*, which has been proved not to serve as a nominaliser, on account of its optionality in the emphatic construction as opposed to the obligatoriness of the nominaliser *de* in the nominal construction, nor is it a tense nor an aspect marker, on account of the possible cooccurrence of an aspect marker and this function word. One may naturally raise a question as to why the particle *de* functions differently, especially in similar constructions such as the pseudocleft and the construction at issue since they both involve assignment of focus. First, let us have a comparison of pseudocleft clauses like (5.4b), repeated here as (5.57) and emphatic clauses like (5.2a), repeated here in a shortened form as (5.58).

(5.57) a. *jian le/guo Lisi de shi Wangwu.*

see PFV/EXP Lisi DE SHI Wangwu

'Who met Lisi is Wangwu.'

b. **jian le/guo Lisi shi Wangwu.*

see PFV/EXP Lisi SHI Wangwu

(5.58) a. *shi Wangwu jian le/guo Lisi de.*

SHI Wangwu see PFV/EXP Lisi DE

'It is Wangwu who met Lisi.'

b. *shi Wangwu jian le/guo Lisi.*

SHI Wangwu see PFV/EXP Lisi

'It is Wangwu who met Lisi.'

As can be seen above, omission of the *de* in the pseudocleft sentence (5.57a) results in ungrammaticality, as shown in (5.57b). This contrasts with the emphatic sentence (5.58a), where the omission of *de* does not affect grammaticality, so the string in (5.58b) is perfectly natural. This indicates that the *de* in the pseudocleft structure functions as a nominaliser, while the one in the emphatic structure does not, though it does not seem to have a semantics either. As a matter of fact, we can also diagnose whether a structure with *de* is a nominalised one by the addition of a head NP in the post-*de* position. We can, for example, add a proper NP like *ren* 'man' in (5.57) but not in (5.58).

(5.59) *jian guo Lisi de ren shi Wangwu.*

see EXP Lisi DE man SHI Wangwu

'The man who met Lisi is Wangwu.'

(5.60) **shi Wangwu jian guo Lisi de ren.*

SHI Wangwu see EXP Lisi DE man

We now return to the question concerning the different functions of *de*. We can answer part of the question, why is the morpheme *de* in the pseudocleft structure a nominaliser? The answer is quite simple. The pseudocleft construction gives rise to an equative interpretation. In other words, the one-place predicate *shi* makes the left and right string on the same footing in terms of semantics. Accordingly, the pre-copular string must be interpreted as a nominalised expression which is referentially equivalent to the post-copular NP. Consequently, the particle *de*, which completes the pre-copular string, must be construed as a nominaliser or relativiser. This can be confirmed by the fact that omission of the copula in the pseudocleft sentence (5.57), repeated here as (5.61a), would result in ungrammaticality as shown in (5.61b), as opposed to the grammaticality of the outcome (5.62b) which results from omission of the copula in the emphatic sentence (5.58), repeated here as (5.62a).

(5.61) a. *jian guo Lisi de shi Wangwu.*

see EXP Lisi DE SHI Wangwu

'Who met Lisi is Wangwu.'

b. **jian guo Lisi de Wangwu.*²²

see EXP Lisi DE Wangwu

(5.62) a. *shi Wangwu jian guo Lisi de.*

SHI Wangwu see EXP Lisi DE

'It is Wangwu who met Lisi.'

b. *Wangwu jian guo Lisi de.*

Wangwu see EXP Lisi DE

'It is Wangwu who met Lisi.'

²² Of course, sentences like (5.62b) can be interpreted as a nominal expression involving a relative clause which can be translated into 'the Wangwu who met Lisi'.

The ungrammaticality of (5.61b) forms a sharp contrast to the grammaticality of (5.62b), which further indicates that the pseudocleft construction does have an equative interpretation that the emphatic construction does not have. We then come to the other part of question, what is the morpheme *de* in the emphatic structure if it is not a nominaliser? Following the analysis of Yuan (2003), I argue that semantically *de* is still a meaningless particle as in other nominal constructions, but functionally denotes a sense of evidentiality in the construction at issue. Diachronically, *de* has been assumed to be derived from a demonstrative (See Simpson & Wu 2002), and has gradually lost its referential function. So there is a justification for the assumption that *de* has developed from a demonstrative denoting referentiality into a particle denoting evidentiality. When this particle occurs at the sentence-final position, as is generally agreed among Chinese linguists (e.g. Chao 1968, N. Li et al. 1998, Yuan 2003), it endows the relevant sentence with a definitive tone. As Chao (1968) insightfully points out, *de* represents the whole situation meaning 'such is the case' or 'this is the kind of situation'.²³

Note that the evidentiality of *de* provides a straightforward explanation of the optionality of *shi*: when the copula is omitted, the affirmative function of the emphatic construction is still maintained because the relevant sentence still has an affirmative or a definitive tone due to the existence of this particle. Conversely, the evidentiality of *de* also provides a straightforward explanation for its own optionality: when this particle is omitted, the copula as a predicate proform plays a prominent role in asserting the happening of a certain event. The omission of both the two morphemes, of course, would lead to the disappearance of the function of confirmation because the outcome is not an emphatic construction any more.

One unexpected result of analysing *de* as an evidential particle is that it may provide a partial account of why an emphatic sentence confirming a completed action does not necessarily need to employ a perfective or an experiential aspect marker, because the occurrence of *de* asserts that an event has already taken place.

²³ It should be pointed out that some researchers' analyses of *de* seem close to the analysis adopted here. For example, following Cheng (1983) who treats *de* as an aspectual-modal particle denoting emphatic assertion of an unchanged situation, Hedberg (1999) proposes that *de* is employed as a modal particle.

5.3.3 The topicality of the pre-*shi* element

The discussion of the emphatic construction in Chinese thus far has been focused on its backbone, the copula *shi* and the particle *de*, and most of the emphatic sentences have been assumed to correspond to cleft construction in English, as shown by the translations. In this subsection, I address the issue of whether the Chinese emphatic structure is syntactically identical to its English counterpart.

In a recent proposal based on her observations, Hedberg (1999) argues that the *shi...de* construction in Chinese is a syntactic focusing construction which is functionally equivalent to the cleft construction in English. Although it is reasonable to assume that Chinese emphatic construction is functionally on a par with the English cleft construction, the two constructions are not syntactically on the same footing. One notable difference is that the focus effects in two emphatic structures are achieved through different means. In Chinese, the focus remains in situ, whereas in English, the focus has a cleft nature. As already discussed, the focus effects in Chinese are achieved through the interaction between syntax and pragmatics: the focus is syntactically confined within the scope of *shi* and *de*, while its locus is pragmatically determined by the speaker. Contrastively, its English counterpart is a syntactic focusing construction where the focus effects are achieved through syntactic reordering.

Another notable difference lies in the structural properties of the Chinese and English emphatic constructions. The English cleft construction is structurally well-defined and the pre-copular element is invariably an expletive pronoun. In the Chinese emphatic construction, the pre-copular expression is usually the topic of the sentence, as roughly discussed in section 5.1. Consider Hedberg's own examples (5.18)-(5.19), repeated as follows.

(5.63) *zhe shi ni hai wo de.*

this SHI you harm me DE

'As for this, it is you who affect me.'

(5.64) *zhe-ge zi shi youren zai shenme shu shang kanjian le gaosu*

this-CL word SHI someone LOC what book on see PFV tell

Bertie, Bertie gaosu wo de.

Bertie Bertie tell me DE

‘As for this word, it was the case that someone saw it from some book and told Bertie, then Bertie told me.’

Comparatively, it is easier to identify the topicality of the pre-*shi* element *zhe-ge zi* ‘this word’ in (5.64): it is the direct object of the post-*shi* clause and is fronted to the initial position of the *shi...de* sentence and hence functions as the topic of the sentence. As for the pre-*shi* element *zhe* ‘this’ in (5.63), it is not an element of the postcopular full clause. Presumably, its content can be established in the previous context, as shown below.

(Hedberg 1999)

- (5.65) *‘chi dongxi you shenme haokan? lao qiao – zhe ren, hao yisi*
eat food have what interest always look this person good meaning
me?wo bu yuanyi chi gei ni kan, suoyi bu chi, zhe shi ni hai wo de.’
ME I not want eat give you look so not eat, this SHI you harm me DE
‘Are you interested in looking at eating? Are you not ashamed to stare at me?
I don’t like to be looked at this way, so I don’t want to eat at all. As for this, it
is you that affects me.’

From the context in (5.65), we can see that *zhe* refers to the speaker’s reluctance to eat food. No doubt this event term also serves as the topic of the *shi...de* sentence, because it sets the frame of reference within which the predication established through the post-*shi* string holds. Note that omission of *shi* (and even *de*) in (5.63)-(5.64) would result in a canonical topic construction.

- (5.66) *zhe, ni hai wo de.*

this 2SG harm 1SG DE

‘As for this, you affect me.’

- (5.67) *zhe-ge zi, youren zai shenme shu shang kanjian le gaosu Bertie,*
this-CL word someone LOC what book on see PFV tell Bertie
Bertie gaosu wo de.

Bertie tell 1SG DE

‘As for this word, someone saw it from some book and told Bertie, then Bertie told me.’

As a matter of fact, the saliency of the pre-*shi* element in the discourse context is not merely limited to sentences with a subject focus and a sentence focus. The natural context for sentences with a VP focus like (5.2f), for example, should be something as follows, where the pre-copular NP *Wangwu* is salient in the previous question.

(5.68) A: *Wangwu zhende jian guo Lisi ma?*

Wangwu really see EXP Lisi Q

‘Did Wangwu really meet Lisi?’

B: *Wangwu shi jian guo Lisi de.*

Wangwu SHI see EXP Lisi DE

‘Wangwu did meet Lisi.’

The saliency of the pre-*shi* constituent in the discourse context is a justification for construing it as a topical expression. Also as pointed out by some researchers (e.g. Hedberg 1999, Yuan 2003), it makes sense to treat the pre-copular element as the topic of the emphatic construction, because it follows the generalisation that material preceding the main verb in the Chinese clause is generally considered to function as the topic of the utterance. Compared with canonical topic constructions dealt with in Chapter 3 where the topic is generally separated from the comment clause and is thus presented in an obvious way, the emphatic construction can be considered a special kind of topic-comment structure, since the topicality of the pre-copular constituent is manifested in a somewhat covert fashion.

To conclude, the emphatic construction is not a syntactic focusing construction. The focus in Chinese emphatic construction is syntactically confined in the scope of *shi* and *de*, namely within the postcopular string, while the location of focus is pragmatically determined by the speaker. The pre-copular constituent as the topic of the sentence sets the frame of reference within which the postcopular predication holds. In next section, I shall incorporate the preliminary analysis here into the dynamic account of this problematic construction.

5.4 Dynamic Account

The crux of characterising the construction at issue lies in a dynamic account of the copula *shi*. In the preceding section, I hypothesised that *shi* is underspecified not only in content but also in type. From an interpretive perspective, *shi*'s underspecified content means that its content value is determined by the relevant context. That is, the copula may not be assigned an interpretation in a straightforward way, but instead may be enriched by contextual information in the same way as a pronoun is parsed. In the context of the emphatic construction, *shi* has its content established directly within the same clause, namely the postcopular string.²⁴

Shi's underspecified type means that its type value is also determined by the relevant context. That is, its type is assigned according to the expressions it associates with, given that it sometimes appears with a NP complement as in predicative, equative, specificational and pseudocleft constructions, and sometimes appears with a VP as in the emphatic constructions with an adverbial, a PP, an object NP and a VP focus, and hence is a one-place predicate of type $e \rightarrow t$, and sometimes appears with a clause as in the emphatic constructions with a subject focus and a sentence focus, and hence can be assigned a propositional type t .

As discussed in the preceding section, *shi* behaves like a predicate proform, parallel to a pronoun. In the DS framework, a pronoun projects underspecified content which is represented by a metavariable of type e , as illustrated in previous chapters, but metavariables may be postulated for any type. So it is reasonable to hypothesise that *shi* projects a predicate metavariable (SHI), with an associated requirement to identify some propositional structure. Treating *shi* as a pronoun gives rise to a set of actions stated in (5.69), showing that there are two possibilities of interpreting this copula for all its forms.²⁵

²⁴ Elsewhere, *shi* may have its content provided by the preceding utterance, as in the case where it is used as an affirmative reply to an enquiry, as illustrated in section 5.3.

²⁵ With regard to the analysis of the copula in Chinese, one interesting question can be raised, can *be* in English be used as a Ty(t) expression in the way *shi* is? There might be such a possibility. Consider the following English construction which is very common in speech, though rare in writing.

(Massam 1999)

- (i) The problem is, is that we can't find the evidence.
- (ii) The thing was, is that she would have been fine anyway.
- (iii) The cruel facts are, is that not every person who teaches Art is a good artist himself.

```

      IF      ?Ty(t)
(5.69) shi THEN put(Ty(t), Fo(SHI), ? $\exists x.Fo(x)$ );
      ELSE IF  ?Ty( $e \rightarrow t$ )
              THEN put(Ty( $e \rightarrow t$ ), Fo(SHI), ? $\exists x.Fo(x)$ );
              ELSE  ABORT

```

In the case of a pronoun, the content of the metavariable associated with it is instantiated by a process of substitution, usually by a term established in the previous context. In the case of the emphatic construction, the hearer however has to identify the potential substituent for the predicate metavariable *SHI* from the subsequent context instead of the previous one, since its interpretation relies on the post-*shi* string, as discussed in subsection 5.3.1. The value of the metavariable *SHI* is therefore subsequently established, through an update provided by the parse of the post-copular VP or clause. To capture this update process, we can employ the DS concept of Late *Adjunction.

Unlike the version of *Adjunction presented in Chapter 2 and employed in Chapters 3 and 4, Late *Adjunction as a variant form licenses the projection of an unfixed node with a requirement for the same type of expression as the node from which it is projected. Since there is no possibility of further developing the fixed node, this form of *Adjunction defines directly the applicability of Merge, viz. the unfixed node and the fixed node from which it is projected. The effect of applying such a transition rule is illustrated in the tree descriptions as follows.

(5.70) LATE *ADJUNCTION

$$\begin{array}{ccc}
 T_n(a), Ty(X), \dots, \diamond & \Rightarrow & T_n(a), Ty(X) \\
 & & \vdots \\
 & & \langle \uparrow_* \rangle T_n(a), ?Ty(X), \diamond
 \end{array}$$

Apparently, the first *be* is the matrix verb which can be analysed as projecting a $Ty(e \rightarrow t)$ node, as in Cann (2004). As for the second *be*, it seems appealing to treat it as an expression of $Ty(t)$ instead of a focus marker as Massam (1999) does, which projects a metavariable whose value is instantiated by the following *that* clause. I am grateful to Caroline Heycock for providing me the material presented above. I shall not explore this English construction in detail here but leave it for future research.

With a dynamic analysis of *shi* as projecting a predicate metavariable and a technical tool for identifying its content value from context, we should be able to characterise the construction in a straightforward way. To see how the parse of the emphatic construction involving *shi* works, I consider three types of constructions as given in (5.71) below, i.e., one with a subject focus, which represents the greatest number of the emphatic sentences, one with a VP focus, which could best show the anaphoric/expletive property of *shi*, and one with a sentence focus, which could best show the pragmatic aspect of the emphatic construction.

(5.71) a. *Lisi shi Wangwu jian guo de.*

Lisi SHI Wangwu see EXP DE

‘As for Lisi, it was Wangwu that met him.’

b. *Wangwu shi jian guo Lisi de.*

Wangwu SHI see EXP Lisi DE

‘Wangwu did meet Lisi.’

c. *Lisi shi Wangwu jian guo de.*

Lisi SHI Wangwu see EXP DE

‘As for Lisi, it was true that Wangwu met him.’

First of all, consider the parse of sentence (5.71a) which begins with the initial word *Lisi*. This fronted object NP, as discussed in subsection 5.3.3, is an expression endowed with topical properties. The parse of such a topic expression permits us to employ the DS machinery of LINK Adjunction that has been used in Chapter 3 to account for topic constructions in Chinese. As a given term it projects an independent structure of type *e* and induces a linked propositional structure of type *t* plus a formula requirement.²⁶ The effect of parsing *Lisi* is shown in figure 5.1.

²⁶ The formula requirement is imposed because proper names like *Lisi* are usually used as an obligatory argument. This additional requirement may be optional, given that the pre-copular constituent could be a situational case or an optional argument, such as temporal and locative, as already illustrated in (5.20), repeated as below.

(i) *zuotian shi Wangwu zai jiuba jian Lisi de.*

yesterday SHI Wangwu in pub see Lisi DE

‘Yesterday, it was Wangwu that met Lisi in the pub.’

(ii) *zuotian zai jiuba shi Wangwu jian Lisi de.*

yesterday in pub SHI Wangwu see Lisi DE

‘Yesterday, in the pub, it was Wangwu that met Lisi.’

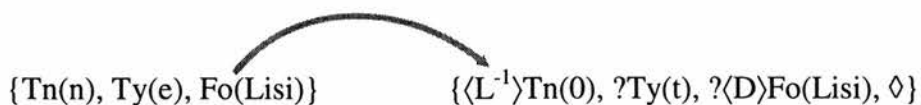


Figure 5.1: Parsing *Lisi*

Subsequent to the parse of the fronted object NP is the processing of the copula *shi* whose actions result in the updating of the propositional tree with $Ty(t)$, $Fo(SHI)$, under the assumption that it is a predicate proform and hence projects a metavariable. At this point, the top node of the LINKed tree, albeit type-complete, still carries a formula requirement. This permits the application of Late *Adjunction. The effect of parsing the copula and applying the transition rule is shown in figure 5.2.

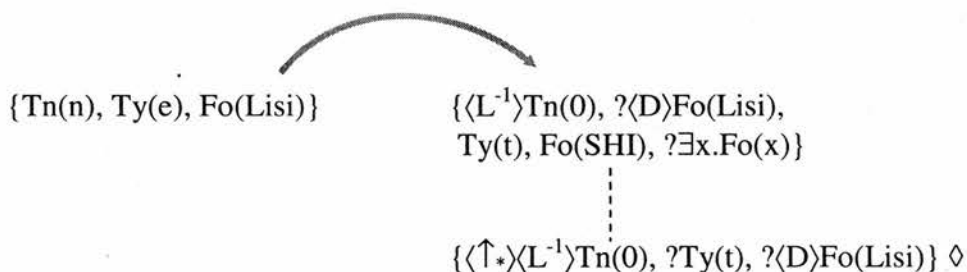


Figure 5.2: Parsing *Lisi shi*

Subsequent to the parse of *shi*, the parse of the postcopular clause proceeds in the normal way a canonical sentence is processed. The two postcopular words project a subject-predicate structure. The phonological prominence of the subject NP *Wangwu* helps the hearer to identify it as the emphasis of the utterance or the focused constituent. To distinguish this subject focus from other elements of the sentence with regard to its semantic/pragmatic status, I highlight it in bold face and also other elements on the same footing, as will be shown in later tree displays. Figure 5.3 shows the parse state where the verb *jian* ‘see’ projects a locally unfixed node.²⁷

²⁷ In actual speech, the postcopular verb *jian* could take optional arguments as shown below, a justification of treating it as projecting an unfixed predicate node.

- (i) *Lisi shi Wangwu jian guo hao duo ci de.*
 Lisi SHI Wangwu see EXP good many times DE
 ‘As for Lisi, it was Wangwu that has met him many times.’

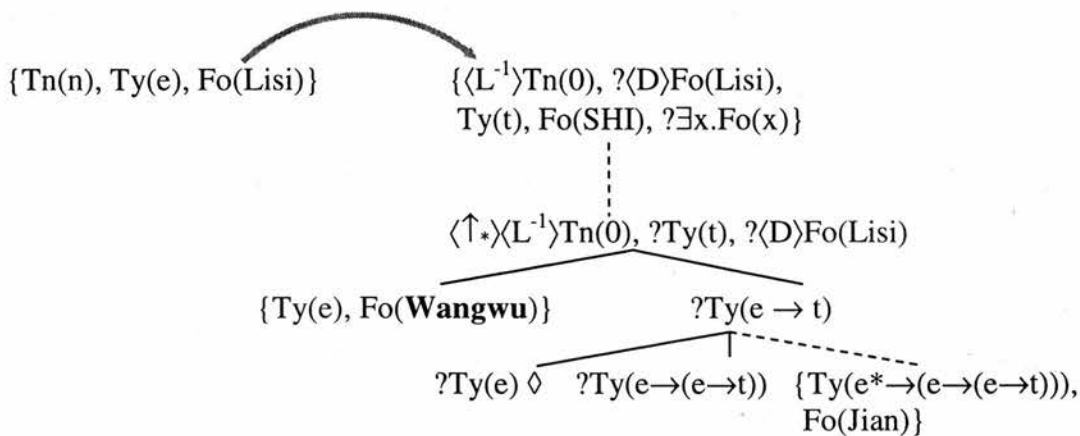


Figure 5.3: Parsing *Lisi shi Wangwu jian (guo)*

Once the verb has been parsed, the pointer moves back to the predicate node which has further two subgoals through Introduction and Prediction. By convention, the pointer moves to open argument node, requiring it to be developed. Since there is no further lexical input, the parse results in the decoration of the pointed node with a metavariable U . Such a set of actions is justified by the fact that whenever an object NP is fronted in the pre-copular sentence-initial position, a pronominal can occur in the canonical object position. We can, for instance, insert a third-person pronoun in the postverbal position of sentences (5.71a) and (5.71c).

(5.72) a. *Lisi shi Wangwu jian guo ta de.*

Lisi SHI Wangwu see EXP 3SG DE

‘As for Lisi, it was Wangwu that met him.’

b. *Lisi shi Wangwu jian guo ta de.*

Lisi SHI Wangwu see EXP 3SG DE

‘As for Lisi, it was the case that Wangwu met him.’

The next step is to replace the metavariable U with $Fo(Lisi)$, satisfying the formula requirement imposed by the pre-copular topic expression. The sentence-final particle *de* signals that there is no incoming information.²⁸ The underspecified type value of

²⁸ As a meaningless particle, *de* is tentatively taken to project no actions in the construction of logical formula. Just like the one in the focus construction to be addressed in Chapter 6, it is arguably still a LINK relation, introducing the tree relation — not onto a term elsewhere in the structure parsed, but onto the structure at which the event term is compiled out of the proposition just processed. This gives us a unified analysis of *de* as building a LINK transition as shown in the subsequent chapter. I am very

the postcopular verb is thus resolved, through the application of Merge. The unfixed propositional tree then compiles to give rise to an output formula, as exhibited in figure 5.4.

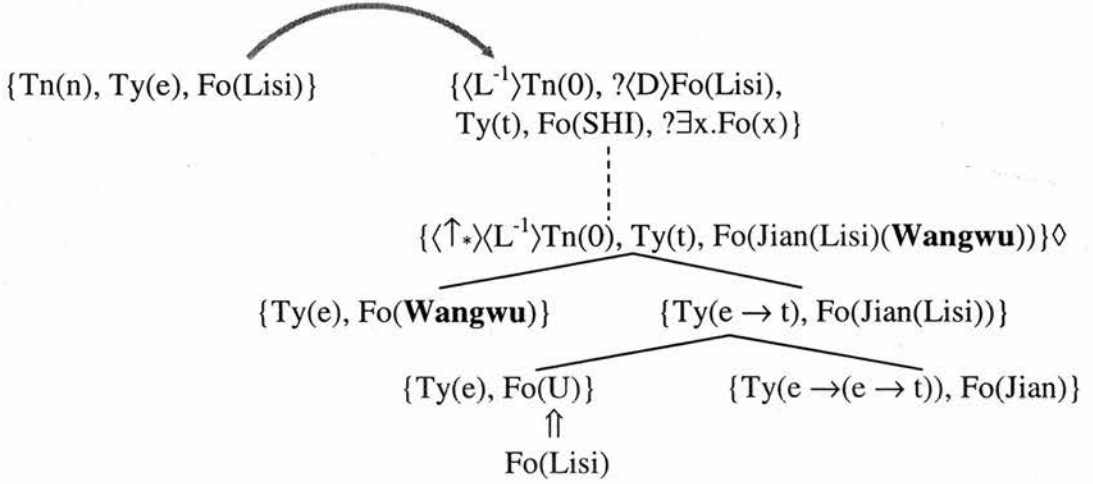


Figure 5.4: Completing the unfixed propositional tree

At the point of completing the unfixed propositional tree, it still carries a requirement to find a fixed position within the propositional tree currently under construction, while the latter also carries a requirement to find a contentful value for the metavariable projected by *shi*. Naturally Merge takes place as illustrated in figure 5.5, satisfying both outstanding requirements. Ultimately the formula value of the copula *shi* is specified as $Fo(Jian(Lisi(Wangwu)))$.

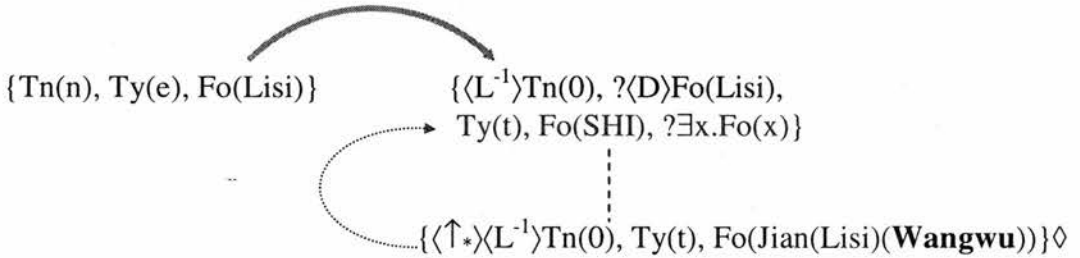


Figure 5.5: Merge of the unfixed and fixed propositional trees

Notice how the process of characterising this grammatical construction reflects its fundamental function stated in (5.31) in subsection 5.2.1, that is, the *shi...de* construction as an emphatic structure serves to affirm some supposition, rather than

grateful to Ruth Kempson for pointing out this to me. I shall address this issue in the extension of this work.

simply reporting an event as C. Li & Thompson (1981) argued. As a predicate proform, the copula *shi* presupposes the existence of some event, which guides the hearer to search for its content in the immediate context. The occurrence of the post-*shi* clause at a later stage instantiates the existence of such an event. With the help of the sentence-final particle *de*, the happening of an event is thus confirmed. The affirmative function is dynamically reflected in the interpretive process of the *shi...de* sentence: *shi* projects an underdetermined propositional structure which is then updated by the logical formula constructed through the parse of the post-*shi* clause.

As for the parse of (5.71b) *Wangwu shi jian guo Lisi de*, an emphatic sentence with a VP focus, it basically has the same story except that it does not involve a LINKed structure, since the pre-copular expression *Wangwu* is still in its subject position.²⁹ The sentence is parsed in a normal way, with the first two words projecting a subject-predicate structure. Applying Late *Adjunction permits the parsing of the postcopular string where the VP is identified as the focus of the sentence, due to its phonological prominence. Figure 5.6 shows the parse state of merging the unfixed predicate node with the fixed predicate node projected by *shi*.

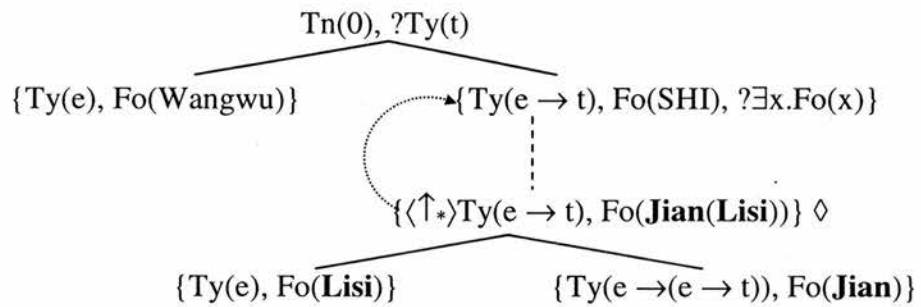


Figure 5.6: Parsing the sentence (5.71b)

²⁹ One may raise a question, it is possible to analyse the pre-*shi* NP *Wangwu* as the topic of the sentence involving a null subject in the immediate post-*shi* position? This is impossible, as evidenced by the fact that unlike (5.71a) the occurrence of a pronominal in the preverbal position would make the sentence hardly acceptable.

- (i) ?**Wangwu shi ta jian guo Lisi de.*
Wangwu SHI 3SG see EXP Lisi DE
- (ii) ?**Wangwu shi ta qu guo Niu Yue de.*
Wangwu SHI 3SG go EXP New York DE

As for (5.71c) with a sentence focus *Lisi shi Wangwu jian guo de*, it is parsed in the same way as (5.71a) with a subject focus, except that it has a broader focus which is pragmatically determined by the speaker, i.e. by changing the prosody of the postcopular clause. Figure 5.7 illustrates the parsing process which also shows the interaction between syntax and pragmatics.

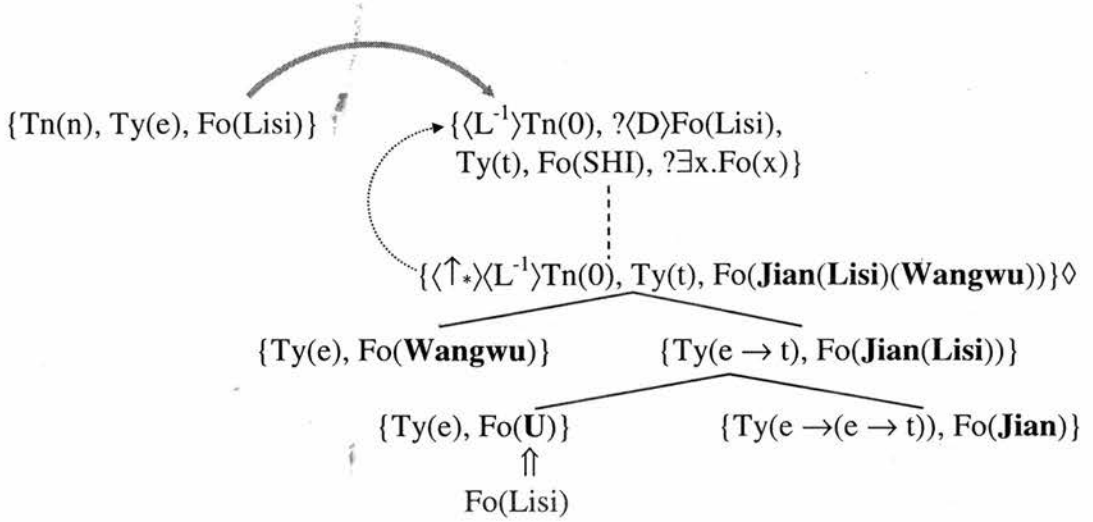


Figure 5.7: Parsing the sentence (5.71c)

Although parsing the three types of emphatic sentences yields the same content as parsing a canonical sentence *Wangwu jian guo Lisi*, the process of establishing the content is significantly different. The construction of the emphatic construction, as displayed, is a process of updating a contextually given propositional structure. Furthermore, the process of parsing the three emphatic sentences is also different. (5.71a)-(5.71c) have been shown through the dynamics of the parsing process to display left-periphery effects, whereas (5.71b) does not.³⁰

Also notice how focus effects are given dynamically. As a pro-predicate with an underspecified semantics, the copula *shi*, when being parsed, projects an underdetermined propositional structure. This arouses the hearer's curiosity about what content it represents, which motivates him/her to search for its value in the context. In other words, *shi* signals to the hearer that the expression following itself may carry some significant information and the postcopular expression thus becomes

³⁰ Although the construction at issue could also be argued to display right-periphery effects, with the post-*shi* string dislocated at the right boundary of the clause. In view of the optionality of the copula *shi* and the topicality of the pre-*shi* element, I attribute it to the left-peripheral family of constructions.

the centre of attention. The later occurrence of a constituent, which is usually phonologically prominent, helps the hearer to identify it as the significant information, hence partially satisfying the hearer's curiosity.³¹ Seen in this perspective, while I claim that the copula *shi* does not have the grammaticalised use as a focus marker, I do not imply that it plays no role in the realisation of focus, because the copula does help in its own way to realise the focus effects of the postcopular expression.

5.5 Summary

In this chapter, I have differentiated the emphatic construction from non-emphatic construction involving *shi* and *de*, and demonstrated that the distinction between them should be made with reference to the discourse context. I have argued that, unlike the English cleft construction, the Chinese emphatic construction is not a purely syntactic focusing construction, because the focus effects are achieved not entirely through syntactic means, but through the interaction between syntax and pragmatics. Specifically, the two morphemes *shi* and *de* define the syntactic scope within which the focus is located, but the locus of focus is pragmatically determined by the speaker.

With the DS framework, I have analysed the copula as a predicate proform which projects a metavariable whose value is instantiated by the logical formula resulting from parsing the post-*shi* string, a verb phrase or a full clause. The interpretation of the *shi...de* sentence has been shown to be a process of updating a contextually given propositional structure, which straightforwardly accounts for why it is considered by functional linguists to serve as confirmation. Furthermore, I have shown that the pre-copular constituent in the emphatic construction has been endowed with topical properties, and a considerable number of the emphatic sentences display left-peripheral effects, albeit in a sort of covert fashion.

³¹ The occurrence of the focused expression does not satisfy the hearer's curiosity completely, so the parse has to carry on in order to find a value for the pro-predicate *shi*.

PART TWO THE RIGHT PERIPHERY

In the first part, I have looked at the preverbal domain and explored three grammatical constructions on the left periphery of the Chinese clause. In this part, I look at the postverbal domain and explore two grammatical constructions on the right periphery of the Chinese clause. As we shall see, the same DS strategies of unfixed nodes and LINKed structures employed in characterising left-periphery effects can also be used in analysing the right periphery phenomena, thus providing a unitary account of the two boundaries of the clause.

Chapter 6 addresses the focus construction which, unlike the emphatic construction dealt with in Chapter 5 where the focus remains in situ, is a syntactic focusing construction where the focus is invariably dislocated to the postcopular position, and therefore creates right-periphery effects, though in a less obvious fashion than the background topic construction discussed in Chapter 7.

Chapter 7 examines a kind of topic construction which mirrors the typical topic construction dealt with in Chapter 3. Like the latter, the topic expression in this construction is also separated from the rest of the sentence; unlike the latter where the topic element is dislocated at the left periphery of the sentence, the topic element in this construction is displaced at the right boundary of the sentence, hence the background topic effects.

Chapter 6

The Focus Construction

6.1 Introduction

In Chapter 5, I have presented an analysis of the emphatic construction that treats the copula *shi* as providing a predicate proform which is enriched through the parse of the postcopular string, and *de* as a particle which endows the sentence with a sense of evidentiality when it occurs at the sentence-final position. In this chapter, I look at another type of construction also involving the copula *shi* and the function word *de*, that is, the focus construction already mentioned in the preceding chapter, and I further explore the structural properties of the Chinese clause. I shall show that although both constructions are copular structures and both can be considered focus structures, unlike the emphatic construction, the focus construction at issue is a syntactic focusing structure displaying right-periphery effects.

To illuminate the use of the focus construction in Chinese, we can use as an example the canonical sentence already employed to exemplify the emphatic construction, and show how distinct syntactic constituents have been made the focus of the sentence. To show that the derivation of the two types of constructions may produce different effects, I repeat the *shi...de* construction below in (6.2a) and (6.3a), together with the focus construction in (6.2b) and (6.3b).¹

¹ Although in the emphatic construction temporal or locative expressions can become the marked focus of the sentence, they rarely appear in the post-copular position of the focus construction at issue. Consider the following pairs:

- (i) a. *Wangwu shi zuotian jian (le/guo) Lisi de.*
Wangwu SHI yesterday see PFV/EXP Lisi DE
'It was yesterday that Wangwu met Lisi.'
b. **Wangwu jian Lisi de shi zuotian.*
Wangwu see Lisi DE SHI yesterday
'When Wangwu met Lisi was yesterday.'
- (ii) a. *Wangwu shi zai jiuba jian (le/guo) Lisi de.*¹
Wangwu SHI in pub see PFV/EXP Lisi DE
'It was in the pub that Wangwu met Lisi.'
b. **Wangwu jian Lisi de shi zai jiuba.*
Wangwu see Lisi DE SHI in pub
'Where Wangwu met Lisi was in the pub.'

In addition, pseudocleft sentences in English like *What John is is brilliant* have no counterparts in

- (6.1) *Wangwu jian guo Lisi.*
 Wangwu see EXP Lisi
 'Wangwu has met Lisi.'
- (6.2) a. *shi Wangwu jian guo Lisi de.*
 SHI Wangwu see EXP Lisi DE
 'It is Wangwu that has met Lisi.'
- b. *jian guo Lisi de shi Wangwu.*
 see EXP Lisi DE SHI Wangwu
 'Who has met Lisi is Wangwu.'
- (6.3) a. *Wangwu shi jian guo Lisi de.*
 Wangwu SHI see EXP Lisi DE
 'It is Lisi that Wangwu has met.'
- b. *Wangwu jian guo de shi Lisi.*
 Wangwu see EXP DE SHI Lisi
 'Who Wangwu has met is Lisi.'

Compared with their counterparts in the emphatic construction, the boldfaced expressions as the loci of main prominence are more easily identified in the focus construction. Syntactically, they appear to be extracted from the pre-copular clause and dislocated to the right periphery of the sentence, whereas apparently their counterparts in the emphatic construction remain in situ, as already discussed in Chapter 5.² It should be pointed out that traditional grammarians (e.g. Wang 1959, Zhu 1980, Lü 1982), who consider *shi* to be a 'judgmental verb', refer to the construction in question as a 'judgmental sentence', while contemporary researchers like Hedberg (1999) treat it as a pseudo-cleft construction, since they analyse the emphatic construction as corresponding to the cleft structure in English.

Semantically, sentences like (6.2b)-(6.3b) are clearly partitioned in terms of the

Chinese. Therefore, I shall limit the discussion to those constructions where an argument of the predicate is extracted and dislocated to the post-copular position. I will continue to gloss the copula *shi* and the particle *de* as SHI and DE as in the preceding chapter.

² Following Prince (1978) who in the spirit of Higgins defines *wh*-clefts as sentences of the form *What S - C_i is/was C_i*, where *S - C_i* = *Sentence minus Constituent_i*, I exclude all those whose subject clause has a lexical head and those which look like the so-called inverted pseudo-clefts in English.

dichotomy presupposition versus focus: the post-copular constituent is construed as focus, as opposed to the pre-copular string construed as presupposition. Precisely, the pre-*shi* string is interpreted as the presupposed information which is conveyed by a headless relative clause completed by the particle *de*, while the post-*shi* noun phrase is understood as the nonpresupposed information. The focus structure of (6.2b) and (6.3b), for instance, can be represented as in (6.4a) and (6.4b) respectively, where the presupposed part introduces a variable whose value is provided by the nonpresupposed part.

(6.4) a. there is an *x*, such that *x* has met Lisi and *x* is Wangwu.

b. there is an *x*, such that Wangwu has met *x* and *x* is Lisi.

At the lexical level, the two morphemes *shi* and *de* in the focus construction seem to receive an interpretation different from their counterparts in the emphatic construction. In the focus construction, the function word *de* plays a crucial role in determining the nominal status of the pre-*shi* string, as can be attested by the fact that the omission of this word would result in ungrammaticality, as discussed in the preceding chapter.

(6.5) **jian guo Lisi shi Wangwu.*

see EXP Lisi SHI Wangwu

(6.6) **Wangwu jian guo shi Lisi.*

Wangwu see EXP SHI Lisi

The fact that *de* is obligatory in the focus construction suggests that it functions in a different fashion than it does in the emphatic construction: in the former it is a particle effecting nominalisation while in the latter it is a sentence-final particle expressing evidentiality.

As for the *shi* in the construction at issue, functionally it is not exactly the same as the one in the emphatic construction. Specifically, *shi* as a predicate proform in the

shi...de construction is optional, as illustrated in the preceding chapter, whereas *shi* in the focus construction is obligatory.³

(6.7) a. *jian guo Lisi de shi Wangwu.*

see EXP Lisi DE SHI Wangwu

‘Who has met Lisi is Wangwu.’

a'. **jian guo Lisi de Wangwu.*

see EXP Lisi DE Wangwu

b. *shi Wangwu jian guo Lisi de.*

SHI Wangwu see EXP Lisi DE

‘It is Wangwu that has met Lisi.’

b'. *Wangwu jian guo Lisi de.*

Wangwu see EXP Lisi DE

‘It is Wangwu that has met Lisi.’

(6.8) a. *Wangwu jian guo de shi Lisi.*

Wangwu see EXP DE SHI Lisi

‘It is Lisi that Wangwu has met.’

a'. **Wangwu jian guo de Lisi.*

Wangwu see EXP DE Lisi

b. *Wangwu shi jian guo Lisi de.*

Wangwu SHI see EXP Lisi DE

‘It is Lisi that Wangwu has met.’

b'. *Wangwu jian guo Lisi de.*

Wangwu see EXP Lisi DE

‘It is Lisi that Wangwu has met.’

³ When one of the verb's arguments becomes the focused constituent, the outcome of deleting *shi* could possibly be construed as a relative clause, as already pointed out in Chapter 5.

(i) *jian guo Lisi de Wangwu*

see EXP Lisi REL Wangwu

‘The Wangwu who has met Lisi’

(ii) *Wangwu jian guo de Lisi*

Wangwu see EXP REL Lisi

‘The Lisi who Wangwu has met’

It is worth noting that sometimes the omission of *shi* does not affect the grammaticality of the relevant sentence, namely the outcome is still a perfectly natural sentence. Consider the following examples taken from Zhu (1980):

(6.9) a. *ta shuo de shi Shanghai hua.*

3SG speak DE SHI Shanghai dialect

'What he speaks is Shanghai dialect.'

b. *ta shuo de Shanghai hua.*

3SG speak DE Shanghai dialect

'He speaks Shanghai dialect.'

(6.10) a. *wo wanshang he de shi niunai.*

1SG evening drink DE SHI milk

'What I drink in the morning is milk.'

b. *wo wanshang he de niunai.*

1SG evening drink DE milk

'I drink milk in the evening.'

Sentences of this sort, as discussed by Zhu, are both syntactically and semantically ambiguous. Syntactically, they could be regarded either as an NP comprising a relative clause construction marked by *de*, as just shown in footnote 3, or as displayed by the translation, an emphatic or *shi...de* construction where *de* cannot be construed as a relativiser and the copula *shi* is omitted since the semantic focus could be identified with the help of the phonological cues. Semantically, the focus could be the subject, the VP or the object if the emphatic stress falls on one of these constituents, as already illustrated in the preceding chapter.

The obligatoriness of *shi* in the focus construction indicates that it is an indispensable syntactic constituent of the sentence, and that the focus construction is different in nature from the emphatic construction. Unlike its counterpart in the *shi...de* construction whose realisation is through the interaction between syntax and pragmatics, the realisation of focus in the construction under discussion is entirely through syntactic means, namely by dislocating one of the arguments to the post-copular position. Therefore, the construction in question is a purely syntactic focusing construction.

One may pose a question from the factual description of the focus construction, can the copula *shi* be followed by the verb or verb phrase of the canonical sentence, given that it can in the emphatic construction? The answer is affirmative, but the outcome is distinctive. The construction in the form of VP + *shi* + VP, as observed and discussed by Chao (1968) and Hashimoto (1969) among others, is not a focus construction but a concessive one. Consider (6.11) which is taken from Hashimoto (1969: 107) and (6.12) which is derived from (6.1):⁴

(6.11) *ta mai shu shi mai shu, keshi...*

3SG buy book sure buy book but

'He buys books, to be sure, but...'

(6.12) *Wangwu jian guo Lisi shi jian guo, keshi...*

Wangwu see EXP Lisi SHI see EXP but

'Wangwu has met Lisi, to be sure, but....'

Thus, we can arrive at a generalisation about the characteristic properties of the focus construction. Unlike the emphatic construction, it is purely a syntactic focusing construction which is effected by reordering the syntactic constituents: any argument of the predicate can appear in the post-copular position and become the focus of the sentence. Unlike its counterpart in the emphatic structure which is of an in-situ nature, the focused constituent, as will be discussed in the next section, is an identificational one in the sense of É. Kiss (1998): the pre-copular string, a headless

⁴ This sort of concessive construction, as pointed out by Hashimoto (1969), can have variant forms if the VP contains an object. For sentences (6.11) and (6.12), Chinese native speakers can also say:

(i) a. *ta mai shi mai shu, keshi...*

3SG buy SHI buy book, but

b. *ta mai shu shi mai, keshi...*

3SG buy book SHI buy but

c. **ta mai shu shi shu, keshi...*

3SG buy book SHI book but

(ii) a. *Wangwu jian guo Lisi shi jian guo Lisi, keshi...*

Wangwu see EXP Lisi SHI see EXP Lisi but

b. *Wangwu jian shi jian guo Lisi, keshi...*

Wangwu see SHI see EXP Lisi but

c. **Wangwu jian guo Lisi shi Lisi, keshi...*

Wangwu see EXP Lisi SHI Lisi but

relative clause, provides a description of the referent whose identity is provided by the postcopular expression.

6.2 Previous analyses

In the linguistic literature, the focus construction in question is often discussed along with the emphatic construction. There are two principal reasons for this: one is that both involve the use of the copular verb *shi* and the function word *de*; the other is that both concern the assignment of focus to certain constituents. Although the existence of the emphatic construction and the focus construction as two types has been acknowledged in the literature, yet no agreement has been reached in the actual language description. Generally speaking, there are two lines of analyses with one claiming that the two patterns, albeit distinguishable in syntactic ordering, are equivalent in semantics, and the other claiming that there is difference, albeit subtle, between the two structures.

Some researchers (e.g. Teng 1979, Lü et al. 1980) consider the focus construction and the emphatic construction to have the same semantics. Teng (1979), for instance, takes sentences like (6.13a) to be synonymous with (6.13b).⁵

(6.13) a. *Wu Xiansheng jiao de shi yuyanxue.*

Wu Mr teach DE SHI linguistics

‘What Mr.Wu teaches is linguistics.’

b. *yuyanxue shi Wu Xiansheng jiao de.*

linguistics SHI Wu Mr teach DE

‘As for linguistics, it is Mr.Wu who teaches it.’

It is true, as pointed out by Lü et al. (1980) in their analysis of *shi*, that the pre-*shi* part is interchangeable with the post-*shi* part, as demonstrated in (6.13). But contrary to the claim of Lü et al. (1980), it is not true that the interchange would leave the semantics unchanged. Firstly, although both the (a) and (b) sentences are copular

⁵ As has been discussed in the preceding chapter, it is sometimes problematic to identify and translate a *shi...de* construction. Because of this, sentences like (6.13b) are also translated as *Linguistics is what Mr. Wu teaches* in the literature, a so-called inverted pseudocleft construction (e.g. Hedberg 1999). The native speakers I queried insist that the current translation should be closer to the meaning of the Chinese because, it is a *shi...de* construction where the post-*shi* constituent is invariably interpreted as the focus of the sentence.

constructions and can be considered as a focus construction, yet they are distinguishable in the distribution of focus. In (6.13a), the focused constituent is the postcopular NP *yuyanxue* ‘linguistics’ which appears to be extracted and dislocated at the right periphery of the sentence and assigned the focus status by the copular verb. In contrast, the same expression *yuyanxue* in (6.13b) appears at the left periphery of the sentence and functions as the topic of the utterance, as can be attested by the fact that deletion of *shi* (and *de*) would yield a typical topic construction.

(6.14) *yuyanxue Wu Xiansheng jiao (de).*

linguistics Wu Mr teach DE

‘As for linguistics, Mr. Wu teaches it.’

As for the focus of the sentence, it could be either the immediate post-*shi* element, here the subject NP *Wu Xiansheng* ‘Mr. Wu’ as shown by the translation in (14b), which is in general the case, or the post-*shi* string *Wu Xiansheng jiao* ‘Mr. Wu teaches’, which is a broad focus as discussed in Chapter 5.

(6.15) *yuyanxue shi Wu Xiansheng jiao de, bu shi women zixue de.*

linguistics SHI Wu Mr teach DE not SHI 1PL self-study DE

‘As for linguistics, it is the case that Mr. Wu teaches it, not that we teach ourselves.’

Secondly, although both the two types of construction concern the assignment of focus to a certain constituent, the presupposition-focus partitioning in the focus construction is easily identifiable, while the line between presupposition and focus in the emphatic construction is fairly fuzzy. Consider the highlighted focus construction in (6.16), which shows that the pre-copular part is not only logically presupposed, but may be contextually salient:

(*China Screen* 2004. 1, p.21)

(6.16) *xuduo yiren chengtian ma meiti ganshe si shenghuo. keshi cangying*

many artist all day curse media interfere private life but fly

bu ding wufengde dan, ni yaoshi guang shudian shui baodao ni?

not sting seamless egg 2SG if stroll bookstore who report 2SG

kexi nimen guang de shi yedian.

regrettably 2PL stroll DE SHI nightclub

‘Many artists cursed the media for interfering their private life. But flies never sting seamless eggs. Who would produce a report on you if you visit a bookstore? Regrettably where you visit is the nightclub.’

As can be seen in the focus construction in (6.16), what precedes *shi* conveys the presupposed information and what follows *shi* the new information, constituting the focus of the sentence. As for the emphatic construction, it is not always partitioned in terms of new and presupposed information: sometimes the whole sentence may represent new information and sometimes the presupposed information, particularly when a whole clause is in focus. Consider the following two examples which are taken from Yuan (2003):

- (6.17) *zheshi, ta huran ting yi-sheng jingxinde hanjiao: “Wang Zhuo, this moment 3SG suddenly hear one-CL terrifying shout Wang Zhuo ni bei bu le!” ta chijingdi zuo qilai, bu, shi liang-wei jingcha 2SG BEI arrest SFP 3SG surprisedly sit up no SHI two-CL policeman ba ta jiu qilai de.*

BA 3SG pull up DE

‘At this moment, he suddenly heard a terrifying shout: “Zhuo Wang, you are under arrest!” He was surprised and then sat himself up. No, it is the case that two policemen dragged him.’

- (6.18) *zheshi Hu Mali zou guolai. qiaoqiaodi ba yidie bijiben jiao this moment Hu Mali walk over silently BA a bunch notebook hand in gei Zheng Bo, ta shuo: “qian jitian, meijing ni tongyi, wo to Zheng Bo 3SG say ago several day without 2SG consent 1SG sizi ba ni de benzi na guolai, ba zhe jitian de biji ti privately BA 2SG ‘s notebook take over BA these several day ‘s note for ni chaoshang le. duibuqi.” Zheng Bo jidong jile, shi Hu Mali ti 2SG copy PFV sorry Zheng Bo excite extremely SHI Hu Mali for ta chao de biji!*

3SG copy DE note

'Then Mali Hu came over. Silently she gave Bo Zheng a bunch of notebooks and said: 'A few days ago, without your consent, I took away your notebooks and copied into them the notes of these past days. Sorry.' Zheng Bo was extremely excited. It is the case that Mali Hu copied the notes for him!'

The whole statement in the *shi...de* sentence in (6.17) is used as a correction and conveys new information, whereas its counterpart in the *shi...de* sentence in (6.18) presents known information which is already given in the discourse.⁶ And there is no partitioning of focus and presupposition in either of the two sentences, because as C. Li & Thompson (1981) correctly pointed out, the *shi...de* sentence mainly serves as confirmation.⁷

Furthermore, although both constructions can be considered focus constructions, focus is realised in different ways, as already discussed. The emphatic construction carries an in-situ focus, which is not associated with syntactic reordering. In contrast, the focus construction at issue involves focus extraction: if one of the arguments of the predicate is intended to be in focus, it has to be displaced at the right periphery of the clause, namely the post-copular position. The focused constituent in this construction, in the sense of É. Kiss (1998), is a type of identificational focus which is subject to a uniqueness or an exhaustiveness condition. É. Kiss defines identificational focus as follows.

(6.19) *The function of identificational focus:*

An identificational focus represents a subset of the set of contextually or situationally given elements for which the predicate phrase can potentially hold; it is identified as the exhaustive subset of this set for which the predicate phrase actually holds.

⁶ As Zubizarreta (1998) points out, there is no unitary definition of focus so far in the literature and the different researchers use the same terms like focus/presupposition to mean different things in many cases. The characterisation of focus/presupposition in terms of new/old information is not tenable because, as shown above, old information may also be focused. Here it is not my intention to go into this fiercely contested area.

⁷ Hedberg (1999) claims that the presupposition of English clefts needs to be split in Chinese between topic material that precedes *shi*, and presupposed material that follows the focus between *shi* and *de*. This claim may never apply to the case where a whole clause is in focus.

É. Kiss uses the following examples to illustrate the difference between cleft focus that is identificational and exhaustive, and ordinary focus that is informational and nonexhaustive.

(6.20) a. It was a hat and a coat that Mary picked for herself.

b. It was a hat that Mary picked for herself.

(6.21) a. Mary picked a hat and a coat for herself.

b. Mary picked a hat for herself.

She states that (6.20b) is not a logical consequence of (6.20a); on the contrary, it contradicts (6.20a). (6.21b), on the other hand, is a logical consequence of (6.21a). Thus, in the focus construction *Wu Xiansheng jiao de shi yuyanxue* (What Mr.Wu teaches is linguistics), *yuyanxue* ‘linguistics’ is the identificational focus and the set of contextually or situationally given elements for which the predicate phrase *jiao* ‘teach’ can potentially hold is, for example, {economics, linguistics, politics, etc.}. {linguistics} is identified as the exhaustive subset of this set for which the phrase *Wu Xiansheng jiao* ‘Mr.Wu teaches’ holds. Of course, the identification of the right-peripheral constituent as focus is facilitated with the help of the headless relative clause: the pre-*shi* string presupposes the existence of an entity and the occurrence of the post-*shi* expression instantiates the existence of the entity. In one word, the distinction between two parts of the sentence as presupposition and focus is transparent.

As far as the emphatic construction is concerned, it does not function as a syntactic focusing construction as the focus construction does. As already discussed in the preceding chapter, the whole construction mainly functions as an evidential structure, although it contains a focused element. Compared with the clear distinction between the pre-copular part as presupposition and the post-copular part as focus in the focus construction, the informational status of the focused element in the *shi...de* construction is not so easily identifiable — sometimes it appears to be an informational focus, as in (6.17), sometimes an identificational focus, as in (6.2), repeated here as (6.22) where the subject focus has clearly a contrastive nature: it is Wangwu, not someone else that has met Lisi.

(6.22) *shi Wangwu jian guo Lisi de.*

SHI Wangwu see EXP Lisi DE

‘It is Wangwu that has met Lisi.’

Let us now turn to another line of analysis. Of the traditional linguists, Zhu 1980 provides perhaps the most detailed analysis of the emphatic construction and the focus construction at issue. Interestingly, Zhu views the two structures as semantically distinct though he considers them of the same type — “judgmental sentences” in his terminology. Whether in the emphatic construction or the focus construction at issue, the morpheme *de* in Zhu’s analysis is the marker of nominalisation whose grammatical function is to convert a VP into an NP in the form of VP + *de*. Accordingly, *zuotian wanshang lai de* in both the following sentences (6.23a) and (6.23b) can be construed as *zuotian wanshang lai de ren* ‘the person who came last night’.

(Zhu 1980)

(6.23) a. *Xiao Wang shi zuotian wanshang lai de.*

little Wang SHI yesterday evening come DE

‘Wang is one of the people who came last night.’

b. *zuotian wanshang lai de shi Xiao Wang.*

yesterday evening come DE SHI little Wang

‘The person who came last night is Wang.’

In Zhu’s view, the logical relationship between *Xiao Wang* and *zuotian wanshang lai de* in sentence (6.23a) corresponds to that between member and class — (6.23a), therefore, can be interpreted as *Xiao Wang* is a member of the class ‘the people who came last night’, as illustrated by the translation; whereas the logical relationship between *Xiao Wang* and *zuotian wanshang lai de* in sentence (6.23b) corresponds to identification — (6.23b), therefore, can be construed as ‘the person who came last night is identified with *Xiao Wang*’, as shown by the translation.

Zhu is right in pointing out that sentences like the above pair do not have the same semantics, yet his analysis does not appear to be on the right track. Discourse-

pragmatically, as discussed in Chapter 5, (6.23a) could also be interpreted as an emphatic structure with an emphasis on the adverbial NP, the time of Xiao Wang's visit, and hence it can be semantically equivalent to the English cleft sentence 'It is last night that Xiao Wang came'. Also, it is generally agreed among Chinese linguists (e.g. Chao 1968, N. Li et al. 1998, Yuan 2003) that the morpheme *de* in this sort of sentence is a particle the occurrence of which at the sentence-final position endows the relevant sentence with a sense of evidentiality: it assures the hearer that something does happen. One piece of evidence is that omission of *shi* does not result in ungrammaticality, as shown in (6.24) below, which suggests that *de* is not a nominaliser and the post-*shi* string is not a noun phrase because otherwise, it would be likely to be ungrammatical.

- (6.24) *Xiao Wang zuotian wanshang lai de.*
 little Wang yesterday evening come DE
 'It was the case that Wang came last night.'

In contrast, omission of *shi* in (6.23b) would result in ungrammaticality as shown in (6.25) below, which suggests that it plays an essential role in determining the formation and interpretation of the sentence. At this point, Zhu correctly claims that *shi* in sentences like (6.23b) denotes identification.

- (6.25) **zuotian wanshang lai de Xiao Wang.*
 yesterday evening come DE little Wang

Cheng 1983 shares the same view with Zhu in his analysis of sentences in (6.26). He claims that there is a subtle difference in semantics between them: the predicate in the (a) sentence denotes subsumption under a class or categorisation, while that in the (b) sentence denotes identification.

- (6.26) a. *zidian shi ta yao de.*
 dictionary SHI 3SG want DE
 'A dictionary is what he wants.'
 b. *ta yao de shi zidian.*
 3SG want DE SHI dictionary

‘What he wants is a dictionary.’

Like Zhu’s example (6.23a), (6.26a) displays some ambiguity as discussed in Chapter 5. It can be interpreted either as an inverted pseudocleft as shown by Cheng’s translation, or an emphatic sentence with a subject focus, in which case it has nothing to do with categorisation.

In summary, the focus construction at issue is different from the emphatic construction in terms of focus realisation, focus distribution and information value. It is a syntactic focusing construction where the focus is realised through syntactic reordering and is dislocated at the right periphery of the sentence. In addition, the focus is always interpreted as identificational, as opposed to the dubious status of its counterpart in the emphatic construction. In the next section, I shall show how the identificational effects of the focus construction can be captured under a dynamic account.

6.3 Dynamic account

As noted, the focus construction is composed of two parts, the pre-copular string and the postcopular expression. Unlike the morpheme *de* in the emphatic construction which is an optional particle, the one in the focus construction is an obligatory nominaliser. Syntactically, the pre-copular string and the postcopular expression are on the same footing. Semantically, both the pre-copular part and the post-copular noun part are referential. Intuitively, rather than picking out some definite entity, the pre-*shi* headless relative clause functions as a description whose referent is assumed to be unknown to the hearer and whose identity is provided by the post-*shi* expression.⁸ Therefore to characterise the structural and semantic properties of the focus construction, we are supposed to characterise the identificational effects.

To provide a dynamic account of the focus construction, we encounter the problem of how to characterise the headless relative clause in Chinese. The characterisation of the Chinese headless relative clause appears problematic, compared with its English counterpart, because the English is introduced by a pronoun which in DS is analysed

⁸ See Cann (2004) for an analysis of specificational copular clauses in English.

as projecting a metavariable as illustrated in Chapter 2, whereas the Chinese is completed with a meaningless particle *de* whose actions seem far from clear at first sight. Before we tackle the Chinese focus construction, let us first consider how to analyse its English counterpart, for instance, the translation of (6.3b) which is repeated here as (6.27).

(6.27) *Wangwu jian guo de shi Lisi.*

Wangwu see EXP DE SHI Lisi

‘Who Wangwu has met is Lisi.’

As introduced in Chapter 2, relative clauses are characterised by means of the DS rule of LINK Transition which allows for the construction of a pair of structures, with the first one inducing the second one and at the same time imposing a constraint for sharing a common term. The parse of a relative clause is thus a process of building a $Ty(e)$ node decorated by a term $Fo(\alpha)$ from which a propositional tree is projected and required to contain a copy of $Fo(\alpha)$. As for the English sentence *who Wangwu has met is Lisi*, the analysis begins with the pronoun *who* whose lexical entry can be given as follows:

(6.28) The lexical entry for *who*

```

IF      ?Ty(e)
THEN    IF      <↓*>Fo(α)
        THEN    ABORT
        ELSE    put(Ty(e), Fo(U), ?∃x.Fo(x));
                make(<L>), go(<L>), put(?Ty(t));
                make(<↓*>), go(<↓*>), put(Ty(e), Fo(U), ?∃x.Fo(x)); go(<↑*>)

```

The set of actions shows that like a pronoun, *who* projects a metavariable with a bottom restriction, but in addition induces the building of a propositional structure with a copy of the metavariable. The parse of the pseudocleft sentence proceeds in the normal way after the linked structures are constructed. The effect of processing

the pre-copular clause is illustrated in figure 6.1, where the unfixed node merges with an open internal argument node.

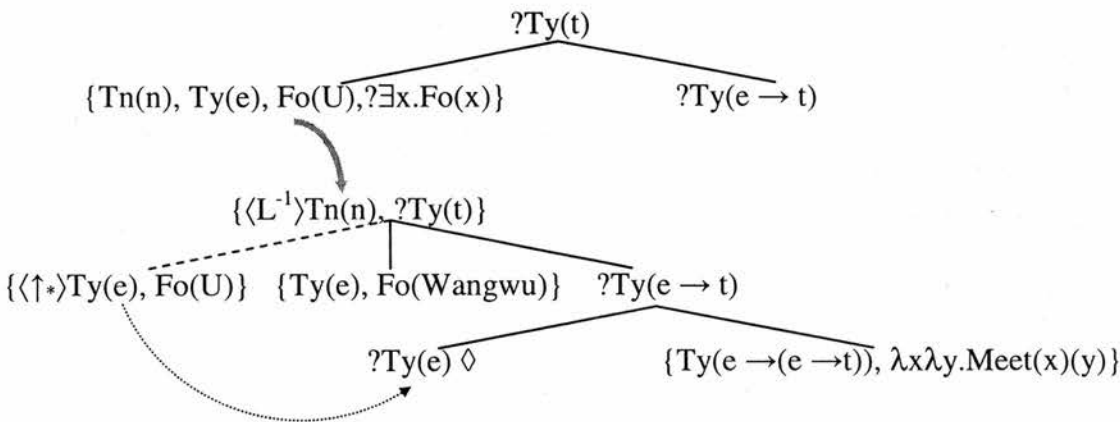


Figure 6.1: Parsing *who Wangwu has met*

The LINKed tree then compiles to yield a logical formula $Meet(U)(Wangwu)$, since the current context does not provide an obvious substituent for the metavariable. The search for the value of the metavariable U carries on as the parse of the pseudocleft sentence proceeds. The pointer then moves to the predicate node, licensing the parse of the copular verb. In Chapter 5, I showed that the copula *shi* in Chinese is a predicate proform which projects underspecified content whose value is provided from the context in which it appears. Similarly, we can treat *be* as an underspecified predicate which is dependent on the context for interpretation. Since what follows the copula in the pseudocleft construction is an NP, we can treat it as one-place predicate of type $e \rightarrow t$, whose lexical actions can be stated as follows.

(6.29) The lexical entry for *be*

IF	$?Ty(e \rightarrow t)$
THEN	$put(Ty(e \rightarrow t), Fo(BE), ?\exists x.Fo(x))$
ELSE	ABORT

The predicate node is thus decorated with the metavariable BE . As discussed in the preceding chapter, the copula as a pro-predicate takes its value from the context in which it occurs. To identify the value for the predicate metavariable, I exploit the opportunities opened up by the perspective of Dynamic Syntax (Kempson et al 2001)

for admitting inferential pragmatic processes into linguistic explanation. Here I adopt a general Relevance Theoretic perspective (see Sperber & Wilson 1995) on the pragmatic process of substitution: the hearer will take as substituent the most accessible formula that is likely to produce significant inferential effects (cf. Cann 2004). Under the current circumstances, what is appealing is the one-place predicate $\lambda x.Meet(x)(Wangwu)$, which has not been used to identify any substituent. Therefore, it should be chosen as substituent as shown in figure 6.2.

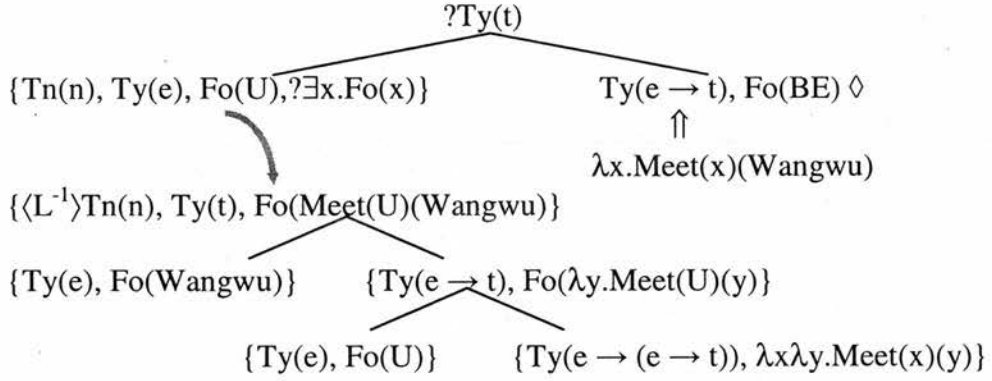


Figure 6.2: Parsing *Who Wangwu has met is*

After substitution, the pointer moves up to the top node in order to complete the propositional type requirement. At this point all type requirements on its daughter nodes are fulfilled but there remains an outstanding formula requirement on the subject node, which prevents the tree from being completed. So the pointer must move down the tree from the top node to the subject node in order to fulfill the requirement on this node. The rule of Late *Adjunction, which has been introduced in Chapter 5, applies to permit the parse of the noun phrase *Lisi* which is taken to project an unfixed node. The value for the metavariable U is hence established through the Merge of the unfixed node with the subject node. The situation is shown in figure 6.3.

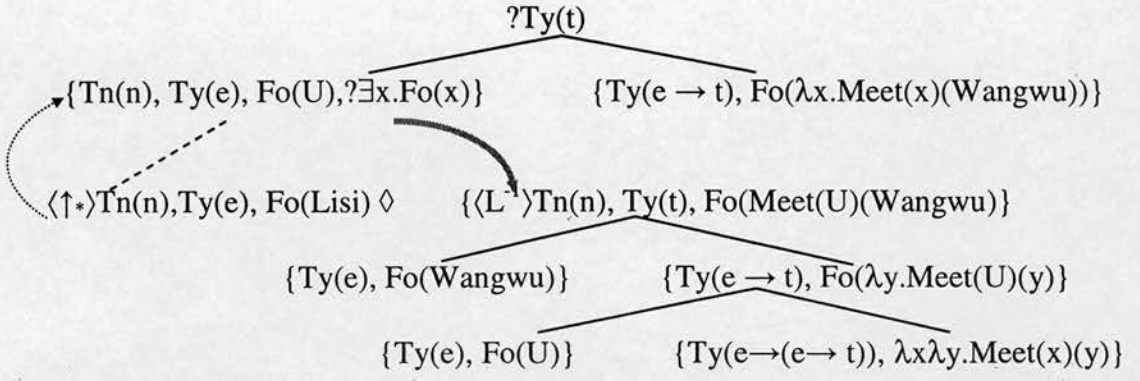


Figure 6.3: Parsing *Who Wangwu has met is Lisi*

After the substitution of the metavariable U with the formula value $Fo(Lisi)$, the pointer moves from the subject node to the top node of the tree, which can pile up and yield a propositional formula $Fo(Meet(Lisi)(Wangwu))$. To interpret the output structure of parsing *Who Wangwu has met is Lisi*, we can apply the rule of LINK Evaluation as stated in (6.30) below, which shows that when the pointer sits at a completed type t node, and if there is another completed type t node which is linked to the pointed node, the combination of the two nodes' formula values is the output value of the whole structure.

(6.30) LINK EVALUATION

$$\frac{\{ \dots \{ Tn(a), \dots Fo(\phi), Ty(t), \diamond \} \}, \{ \langle L^{-1} \rangle MOD(Tn(a)), \dots Fo(\psi), Ty(t) \}}{\{ \dots \{ Tn(a), \dots Fo(\phi \wedge \psi), Ty(t), \diamond \} \}, \{ \langle L^{-1} \rangle MOD(Tn(a)), \dots Fo(\psi), Ty(t) \}}$$

$$MOD \in \{ \langle \uparrow_0 \rangle, \langle \uparrow_1 \rangle \}^*$$

The result of interpreting the English sentence is therefore $Fo(Meet(Lisi)(Wangwu) \wedge Meet(Lisi)(Wangwu))$, two conjoined $Ty(t)$ expressions.

Let us now return to the parse of the focus construction in Chinese. Unlike the English sentence which begins with a pronoun, the Chinese ends up with the relativiser *de*, displaying the head-final properties opposed to the head-initial properties of English relative clauses. Presumably, the tree growth of parsing the pre-copular headless relative clause *Wangwu jian guo de* 'Who Wangwu has met', is upward, with the relativiser *de* projecting a sequence of actions which induces the

LINK transition from the top node onto a head node. Undoubtedly, the characterisation of the headless relative clause in Chinese hinges on the morpheme *de*. We now go into the question of how to define the lexical entry of this relative marker.

As mentioned in Chapter 5, the modifying *de* is diachronically derived from a demonstrative, and now devoid of its original definiteness value. Following the spirit of Simpson 1999's analysis that *de* is a bleached determiner and can be considered expletive-like, and the intuition that upon hearing *de* in the similar construction native speakers would expect a noun phrase to occur in the post-*de* position, we can define the lexical entry of *de* as follows:⁹

(6.31) The lexical entry for *de*

```

IF      Ty(t)
THEN   IF       $\langle \downarrow_* \rangle$  (Fo(U),  $\exists x.Fo(x)$ )
        THEN   make( $\langle L^{-1} \rangle$ ), go( $\langle L^{-1} \rangle$ ), put(Ty(e), Fo(U),  $\exists x.Fo(x)$ );
        ELSE   ABORT
ELSE   ABORT

```

The trigger for *de* is a propositional type, because the headless relative clause is already parsed prior to this relativiser. The action of *de* projecting a node of type *e* depends on the pre-*de* string, as indicated by the second clause. Specifically, *de*'s inducing the LINK transition onto the head node requires there to be a proposition containing an uninstantiated metavariable. Such a condition being satisfied, *de* would

⁹ Kempson et al. (2001: 139) suggests that to reflect the spirit of Simpson's analysis of *de* as a determiner, this complementiser can be defined as projecting a sequence of actions, first to project a metavariable as annotation to one such node of type *e*, secondly to induce the LINK transition onto a head node, imposing a requirement for that same metavariable on that head node. This kind of analysis can only apply to relative clauses like (6.3b), the one being discussed here, but not those like (6.2b) where the subject NP is missing.

(i) *jian guo Lisi de shi Wangwu.*
 see EXP Lisi DE SHI Wangwu
 'Who has met Lisi is Wangwu.'

Therefore, it may be inappropriate to allow *de* to be responsible for projecting an argument daughter node of the verb, because it has something in common with the relative pronoun in English in that it is only responsible for the connection between the head node and the relative clause.

project a metavariable which is exactly of the same value as the metavariable existing in the initial structure with a value $Fo(U)$. In other words, *de* projects a metavariable as annotation to the head node which is inversely linked to the top node of the first tree projected by the relative clause. This analysis straightforwardly explains why the following sentences are not well-formed.

- (6.32) a. **Wangwu jian guo Zhangsan de shi Lisi.*
 Wangwu see EXP Zhangsan DE SHI Lisi
 b. **Zhangsan jian guo Lisi de shi Wangwu.*
 Zhangsan see EXP Lisi DE SHI Wangwu

At the point all the elements of the headless string *Wangwu jian guo de* ‘who Wangwu has met’ have been processed, there is no obvious substituent for the metavariable. So the pointer moves to the top node, and then through the general rules of Introduction and Prediction, the predicate node is constructed, which licenses the parse of the copula verb *shi*, as shown in figure 6.4 where the pointer sits at the functor node, requiring it to be developed.¹⁰

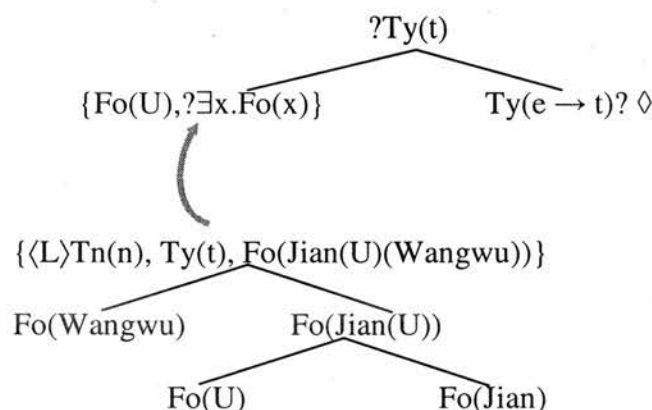


Figure 6.4: Parsing *Wangwu jian guo de*

In Chapter 5, the copula *shi* is analysed as underspecified in both type and content, and is enriched through the parse of the post-*shi* string. In the focus construction, we treat it as a one-place predicate of type $e \rightarrow t$, rather than type ambiguous, since it is invariably followed by a noun phrase. The parse of *shi* is similar to that of *be*, that is,

¹⁰ For simplicity, the resolution process of the verb's underspecification is ignored in the tree display here.

it projects a predicate metavariable SHI whose potential substituent is the one-place predicate $\lambda x.Jian(x)(Wangwu)$ derived in the pre-copular string. The rest of the parse of the sentence is similar to that of the English one. The incompleteness of the subject node forces the pointer to move back, and through Late *Adjunction the post-*shi* expression *Lisi* is parsed, which projects an unfixed node as shown in figure 6.5.

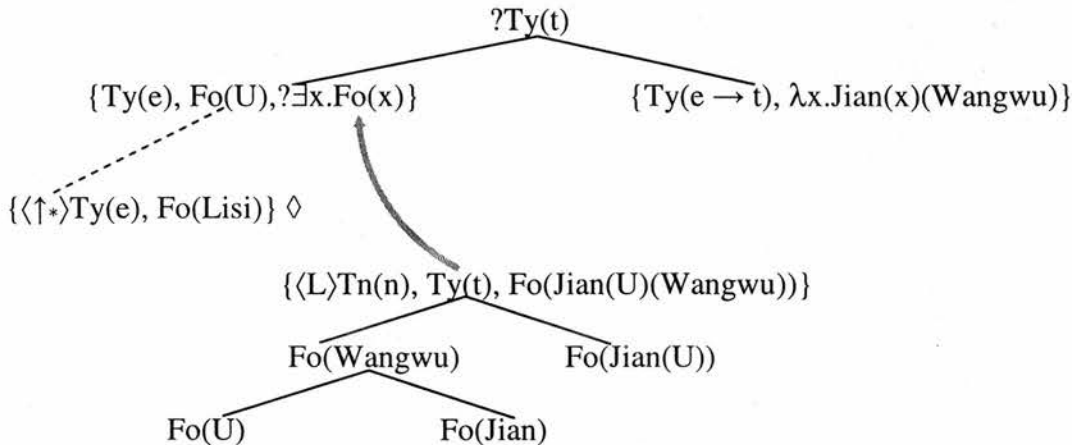


Figure 6.5: Parsing *Wangwu jian guo de shi Lisi*

The value of the metavariable U is then instantiated as $Fo(Lisi)$ through application of Merge. The output value of parsing *Wangwu jian guo de shi Lisi* has the identical result as the English pseudo-cleft, i.e. $Fo(Meet(Lisi)(Wangwu) \wedge Meet(Lisi)(Wangwu))$, two conjoined $Ty(t)$ expressions.

Notice how the identificational reading and the focus effect of the construction at issue is reflected in the dynamic account presented above. The descriptive property of the headless relative clause in the pre-copular position is characterised by treating it as entailing a metavariable with associated presupposition decorating the subject node. The instantiation of the metavariable is characterised by identifying its substituent at a later stage, that is, through the parse of the definite noun phrase in the postcopular position, hence the identificational effect. As for the focus effect of the construction, it is characterised by analysing the postcopular expression as first projecting an unfixed node through Late *Adjunction and then being located at a fixed position through Merge.

6.4 Summary

In this chapter, I have provided an account of the focus construction that, in line with the account of the emphatic construction, still treats *shi* as a pro-predicate which is semantically underspecified and pragmatically enriched from the local context. Like the one adopted in the preceding chapter, the dynamic analysis of the copula is carried out through pragmatic inference. By construing the pre-copular string as a description of a referent whose value is provided by the postcopular constituent, the dynamic analysis explains why the construction at issue denotes identification. By treating the postcopular noun phrase as projecting an unfixed node which is the update for the 'subject' node, the dynamic analysis explains why the construction at issue gives rise to a focus interpretation. The successful characterisation has shown that the focus construction has right-periphery effects, though in a less obvious fashion compared to the background topic construction which I shall deal with in the next chapter.

Chapter 7

Background-Topic Constructions

7.1 Introduction

The exploration of the left periphery of the Chinese clause has revealed that this language has one salient characteristic — the prominence of topic, as shown by the characterisation of topic constructions, passive constructions, and even some types of the emphatic constructions. In this chapter, I am going to look at another type of construction, better known as “afterthought”, which has some properties similar to those of topic constructions dealt with in Chapter 3, but which displays right periphery effects as opposed to the left-periphery effects of topic constructions. I shall show that the DS machinery used to capture the left-periphery effects of topic constructions can also be employed to capture the right-periphery effects of the construction in question.

The so-called afterthought phenomenon in Chinese was first observed and defined by Chao (1968) as follows: ‘If an unplanned part is added to a sentence which has already been completed, then it is an afterthought form.’ As an illustration, he treats sentences like the following as a word order inversion and the subject is supplied as an afterthought.

(7.1) *jianghua hao kuai ya, Lisi.*

talk very fast PAR Lisi

‘(He) talks very fast, Lisi.’

(7.2) *chi fan le ma, ni?*

eat dinner PFV Q 2SG

‘Have had dinner, you?’

(Chao 1968)

(7.3) *kexiao jile, zheige ren.*

funny very this person

‘Awfully funny, this guy!’

In (7.1)-(7.3), the right-peripheral NP expression can be construed as co-referential to the subject of a complete verb phrase and it is both syntactically and semantically feasible to reconstruct it in the preverbal position. This type of structure is labeled as zero anaphoric right-dislocation in the literature (e.g. Guo 1999), since the rightmost expression provides information about the identity of the implicit referent. This type of right-dislocation is highly frequently used in Chinese. In addition, the right-peripheral NP may have an explicit co-referent, that is, there is an anaphoric expression which is identified as co-referential with the rightmost NP.

(7.4) *ta jianghua hao kuai ya, Lisi.*

3SG talk very fast PAR Lisi

‘He talks very fast, Lisi.’

(7.5) *zhe tai mei le, zhe hua.*

this too beautiful PAR this flower

‘This is very beautiful, this flower.’

(7.6) *ni yao naxie ma, naxie shu?*

2SG want those PAR, those book

‘Do you want those, those books?’

Sentences like (7.4)-(7.6) show that syntactically the end-placed constituents are not merely confined to subject NP, and semantically these rightmost expressions serve as an elaboration since they contribute more information to the main clause (cf. Guo 1999). More interestingly, Chinese even allows a pronoun to double an NP or a full noun phrase to double itself on the right periphery of the clause — a type of reduplication.

(Chao 1968)

(7.7) *hei mao chi, hei mao.*

black cat eat black cat

‘Black cat eat, black cat.’

(7.8) *ta bie fan wo le, ta.*

3SG not annoy 1SG PAR, 3SG

‘She should stop annoying me, her.’

(7.9) *zhe yinyue tingzhe ershou a, zhe yinyue.*

this music sound familiar PAR this music

‘This music sounds familiar, this music.’

As J. M. Lu (1980) noted, right-displaced expressions have a very restrictive distribution, that is, they cannot occur before sentence-final particles. Violation of this restriction results in ungrammaticality, as shown by (7.10)-(7.12), which are derived from (7.2), (7.4) and (7.9) respectively.

(7.10) **chi fan le, ni, ma?*

eat dinner PAR 2SG Q

‘Have had dinner, you?’

(7.11) **ta jianghua hao kuai, Lisi, ya.*

3SG talk very fast Lisi PAR

‘He talks very fast, Lisi.’

(7.12) **zhe yinyue tingzhe ershou, zhe yinyue, a.*

this music sound familiar this music PAR

‘This music sounds familiar, this music.’

The structure type at issue is also known as extraposition (Jespersen 1933), or antitopic (Chafe, 1976).¹ I call it background topic construction because as will be discussed below, one notable characteristic of sentences like (7.1)-(7.9) is that they appear to be the analogue of topic constructions on the left periphery — their structural and semantic properties bear a resemblance to those of the topic construction dealt with in Chapter 3. I shall demonstrate that just like the leftmost NP expression in the topic construction, the rightmost NP expression in the construction at issue displays topic effects, more precisely background topic effects as reported in Herring (1994).

¹ The postposed constituents reported in the literature (e.g. J. M. Lu 1980, J. G. Lu 2000) involve a wide variety of categories such as pronoun, noun phrase, adverbial, prepositional phrase, verb phrase and so on, due to the flexibility of Chinese syntax. Here I shall focus on the right dislocation of noun phrases for the reason that — as will be discussed later — dislocation involving nominal constituents, which is most frequently used in speech, appears to have been conventionalised.

7.2 Previous analyses

The right dislocation phenomenon described in the preceding section is quite pervasive in spoken discourse, and has received attention from both traditional and contemporary linguists, though possibly there have been some changes in the nature and function of some of the right-dislocation structures. In what follows, I shall provide a review of previous analyses which may reflect certain changes in this grammatical construction.

7.2.1 *Traditional analysis*

The construction at issue has been traditionally regarded as a form of repair for omissions, hence an afterthought form which is thought (e.g. Chao (1968) to be an unplanned part added to a completed sentence, as mentioned in the preceding section, and which is found to occur in unplanned speech under time or other psychological pressures. Givón (1976) suggests that this kind of right-dislocation is a topic-shift device in which the speaker starts out by assuming that the anaphoric expression (or zero pronoun in pro-drop languages like Chinese) will do the work, and then changes his or her mind and presents or repeats the topic just for the sake of safety. There has been a general consensus that in most cases the occurrence of a nominal expression displaced to the end of an utterance is the consequence of the speaker's effort to repair a performance error.

This is likely to be the case when this sort of linguistic phenomenon originally came into being, since traditionally it was claimed that there was a brief pause between the main clause and the postponed constituent, which was often taken as evidence for the argument that the peripherally positioned expression is an afterthought, and which is why a comma is conventionally used in the written form. This analysis can provide a straightforward explanation for the first two types of Chinese right-dislocation structure: the occurrence of the right-dislocated constituent reflects the speaker's concern that the hearer may have difficulty understanding what is being talked about, due to omission, as in the case of the zero anaphoric, or underspecification of the topic, as in the case of elaboration. However, it cannot explain why the reduplication

type frequently occurs in speech, because there is no performance error at all, given both the well-formedness and completeness of the main clause.²

Although there is a possibility that right-dislocation structures may have originally been a repair device in spoken discourse and hence there has been some justification for treating it as an afterthought form, there is linguistic evidence showing that this sort of construction has been conventionalised to some extent and hence may have gradually turned into a grammatical device. There have been reports (e.g. J. M. Lu 1980, Guo 1999) that there are some prosodic features in the intonation of the right-dislocation structure suggesting that the rightmost expressions may not have the obvious afterthought nature. J. M. Lu, for example, reports that the Chinese speakers he queried insist that there are two contrasting prosodic segments in the relevant utterances, with the main clause uttered high-pitched and the rightmost expressions fast and low-pitched. Guo's corpus study confirms the consistency of the prosodic change in the prosodic contour of the end-place expression, which is characterised by a faster tempo and lower pitch in comparison with the main clause, indicating a syntactic break.

Apart from the prosodic constraints, there are also syntactic constraints on the distribution of the peripherally placed expressions, violation of which would result in ungrammaticality. As has already been shown, the syntactic position for the right-dislocated expression is very restricted, namely it can only be placed outside a clause, thus yielding right-periphery effects. Since the assigned position for the right-dislocated form is the rightmost slot of the sentence, the sentence-final particles which are always placed at the very end of the sentence have to give way to the end-placed expression. In other words, they cannot stay in situ, that is, after the right-displaced expression. Otherwise, it would produce ungrammaticality, as mentioned in the introduction.

- (7.13) **chi fan le, ni, ma?*
eat dinner PFV 2SG Q
'Have had dinner, you?'

² Guo (1999) reports that the reduplication type takes up nearly 40% of the total occurrences in his corpus study. As he points out, this is too significant a number to be dismissed as performance errors.

(7.14) **ta jianghua hao kuai, Lisi, ya.*

3SG talk very fast Lisi PAR

'He talks very fast, Lisi.'

(7.15) **zhe yinyue tingzhe ershou, zhe yinyue, a.*

this music sound familiar this music PAR

'This music sounds familiar, this music.'

The grammatical forms for (7.13)-(7.15) should be (7.16)-(7.18) respectively.

(7.16) *chi fan le ma, ni?*

eat dinner PFV Q 2SG

'Have had dinner, you?'

(7.17) *ta jianghua hao kuai ya, Lisi.*

3SG talk very fast PAR Lisi

'He talks very fast, Lisi.'

(7.18) *zhe yinyue tingzhe ershou a, zhe yinyue.*

this music sound familiar PAR this music

'This music sounds familiar, this music.'

Another salient feature of the construction in question is that the omission of the rightmost expression would not affect the grammaticality of the main clause. Put in another way, the preceding clause in this kind of construction can function as an independent grammatical structure on its own, which suggests the optionality of the end-placed constituent, despite its co-referentiality with one of the arguments of the predicate. If we leave out the rightmost expressions *ni* 'you', *Lisi*, and *zhe yinyue* 'this music' in (7.16)-(7.18), the resulting sentences are perfectly natural.

(7.19) *chi fan le ma?*

eat dinner PFV Q

'Have (you) had dinner?'

(7.20) *ta jianghua hao kuai ya.*

3SG talk very fast PAR

'He talks very fast.'

(7.21) *zhe yinyue tingzhe ershou a.*

this music sound familiar PAR

'This music sounds familiar.'

Therefore, it may be reasonable to assume that historically most of the right-dislocation constructions may have emerged as a repair device in performance, but gradually have been developed into a conventionalised grammatical device.

7.2.2 *Structural analysis*

Despite Chao 1968's characterisation of the afterthought form as a word order inversion mainly involving an NP expression, a few researchers (e.g. J. M. Lu 1980, Packard, 1986, J. G. Lu 2000) have observed that the right-peripheral expressions, as mentioned in footnote 1, include not only a noun phrase but adverbial, prepositional phrase, verb phrase, a subject plus verb and so on, as shown in (7.22)-(7.25) below.

(J. M. Lu 1980)

(7.22) *lai le ma, ni gege? – zou le ba, dagai.*

come PFV PAR 2SG brother leave PFV PAR, probably

'Did (he) come, your brother? – (He) left, probably.'

(Ibid)

(7.23) *wo jian guo ta yihui, zai zhongqiujie.*

1SG see EXP 3SG once on mid-autumn-festival

'I met him once, on Mid-Autumn Festival.'

(J. G. Lu 2000)

(7.24) *ni na tian zenmeyang a, kai Manlian jue de?*

2SG that day how PAR watch Manchester U feel

'What did you feel that day, watching Manchester United?'

(Packard 1986)

(7.25) *ni xianzai shuohua ye dai kouyin ma, ni jue de?*

2SG now speak also carry accent PAR, 2SG feel

'Do you also have an accent when you talk, do you feel?'

Given the fair degree of structural complexity of the rightmost constituents, Packard (1986) argues against the afterthought analysis and proposes that the expressions described as right-dislocated or afterthoughts are not linearly juxtaposed extra-

sentential constituents, but the remaining part of the original sentence which has undergone a movement process. More specifically, there is a structural dependency relationship between the dislocated and the non-dislocated constituents, both of which are part of an underlying sentence, with the dislocation occurring as the result of movement. In Packard's view, the rightmost expressions are not constituents which are moved to the right periphery of the sentence, but instead the leftovers of the original sentence after a constituent has been moved to the left periphery of the sentence. Thus, what is dislocated is the main part of the utterance, and the leftward dislocation is motivated for the purpose of receiving focus.

The left-dislocation analysis perhaps could provide a reasonable explanation for the zero anaphor type: the main part of the utterance is fronted to sentence-initial position due to its thematic prominence. In the following sentences, undoubtedly *chi-fan* 'have dinner', *shui-jiao* 'sleep' and *hui-jia* 'go home' are more prominent in terms of informational value than the end-placed expression *ni* 'you', *wo* 'I' and *zanmen* 'us', which appear to function as the topic of the sentence since they are what the main predication is about, though they occur relatively late in the utterance.

- (7.26) *chi fan le ma, ni?*
 eat dinner PFV Q 2SG
 'Have had dinner, you?'

- (7.27) (Chao 1968)
yao shuijiao le, wo.
 want sleep PAR 1SG
 'Want to sleep, I.'

- (7.28) *hui jia ba, zanmen.*
 return home PAR 1PL
 'Let's go home, us.'

However, this analysis, as Packard himself is fully aware, may not accord with the established discourse convention, namely the initially-provided expression usually carries the old information, and hence is generally considered the topic of the sentence. He argues however that sentence-initial position could also be employed as a position of focus. This is intuitively true for the Chinese language, given the focus

effects of the sentence-initial expression of some types of topic constructions and also passive constructions addressed in Chapters 3 and 4 respectively. Packard further argues that the construction at issue is a case where the new information is deemed of sufficient importance to occur first in linear sequence, and the function of this grammatical construction is precisely to focus the new information at the expense of the old.

The part of his analysis that concerns the informational value seems reasonable because as will be discussed later, the rightmost expression potentially has certain topical properties. Nevertheless, the left-dislocation hypothesis apparently cannot apply to the other two types of the structure at issue: elaboration and reduplication. Specifically, it cannot account for why an NP in the string moved to the left periphery of the clause should have a co-referential or an identical counterpart left in its original position. The following examples, which have already been shown above, indicate that there is no movement, leftward or rightward, occurring in this sort of structure.

(7.29) *ta jianghua hao kuai ya, Lisi.*

3SG talk very fast PAR Lisi

'He talks very fast, Lisi.'

(7.30) *zhe tai mei le, zhe hua.*

this too beautiful PAR this flower

'This is very beautiful, this flower.'

(7.31) *hei mao chi, hei mao.*

black cat eat black cat

'Black cat eat, black cat.'

(7.32) *zhe yinyue tingzhe ershou a, zhe yinyue.*

this music sound familiar PAR this music

'This music sounds familiar, this music.'

Apart from its inability to account for the existence of the above two types of structure, another inadequacy of the left-dislocation analysis is that it cannot explain the syntactic restriction on the peripherally-provided expression, that is, why the sentence-final particle cannot follow this expression and occupy the rightmost slot,

its canonical position in the sentence, because there is no obvious reason why the moved constituent has to take the sentence-final particle with it.

By the way, the right-dislocation phenomena illustrated by sentences (7.22)-(7.25) are distinguishable from those described in section 7.1, because the sentences appear to be employed as a kind of repair in the course of ongoing talk (see Schegloff et al. 1977).³ Without adding the verb phrase, (7.24), for instance, would not make a lot of sense to the hearer. Such afterthought-like phenomena are not in point for the present discussion which is concerned with the right-dislocation structure conventionalised as a discourse device.

From the above discussion, I conclude that the structural analysis in terms of left-dislocation is untenable and thus claim that the construction at issue does have a right-dislocation nature with respect to the restricted locus of the sentence-final particle.

7.2.3 *Pragmatic analysis*

Guo (1999) provides a pragmatic analysis of the right-dislocation structure. He claims that right-dislocations in Chinese may have originally emerged as a repair device and hence have been labeled as afterthoughts, given the informational value of the postposed constituent, particularly in the case of zero anaphor and elaboration types. Later it has gradually been conventionalised as a grammatical device, as evidenced by the set of consistent syntactic and prosodic features discussed in 3.2.1. Guo argues that the right dislocation as a grammatical structure has developed an emphatic function to place a special focus on the concerned person or object, especially when they are assigned to the topic slot and thus assume the presupposed information status.⁴ Furthermore, he argues that this emphatic function has always been associated with negative evaluations by the speaker, and the combination of the emphatic function and negative effect is characterised as the intensifying function.

³ Similar to the report of J. M. Guo (1980), the seven speakers queried by the author have different opinions about the issue of whether there is a pause between the main part of the sentence and the right-dislocated constituent in sentences like (7.22)-(7.25). Five of them insist that there usually should have a pause, though sometimes there might not be if a person frequently speaks in the error-like way. The disagreement at least shows that unlike the right-dislocation constructions in (7.1)-(7.9), those in (7.22)-(7.25) have not been conventionalised yet.

⁴ Guo explains that he uses the term 'focus' in its non-technical sense.

The treatment of the right-dislocation structure as an emphatic device might find its best application in the reduplication type, namely it can provide a natural explanation for the recapitulation of a noun or pronoun through a second noun or pronoun. It is probably the case that the speaker intends to use redundant information to focus the addressee's attention on the referent of the end-place expression and hence expresses some degree of emphasis. Sentences like (7.7)-(7.9), repeated here as (7.33)-(7.35), may produce certain focus effects. The end-placed expressions *hei mao* 'black cat', *ta* 'he' and *zhe yinyue* 'this music' in these sentences are certainly the focus of the speaker's attention.

(7.33) *hei mao chi, hei mao.*

black cat eat black cat

'Black cat eat, black cat.'

(7.34) *ta bie fan wo le, ta.*

3SG not annoy 1SG PAR, 3SG

'She should stop annoying me, her.'

(7.35) *zhe yinyue tingzhe ershou a, zhe yinyue.*

this music sound familiar PAR this music

'This music sounds familiar, this music.'

However, the pragmatic analysis faces a couple of problems. Firstly, it might never be applicable to the two other types, the zero anaphor and elaboration types. It is against our intuition that the right-dislocation structure in these two cases serves the emphatic and intensifying functions because as discussed in the preceding section, the clausal sequence is informationally more prominent than the right-peripheral expression. Consider the following typical example of right-dislocation given by Guo (1999: 1107).

(7.36) *cai wo jiao le, ni.*

step 1SG foot PFV 2SG

'(You) stepped on my foot, you.'

Undoubtedly, the speaker's intention of using the above structure is not to emphasise the referent of the right-positioned form, *ni* 'you' but the information value of the main clause. As for the postposed expression, it appears to serve as a (background) topic since in general it is what the main part of the utterance is about. The construal of the right-peripheral expression as a topic is also in accordance with the original function of this grammatical construction as a repair device. That is, the rightmost expression provided at a relatively late stage specifies the frame of reference for the main part of an utterance which appears at an early stage.

Secondly, Guo's claim that the right-dislocation structure has an emphatic function appears to be a bit of a contradiction to his characterisation of the prosodic properties of right-dislocated expressions. As has already been discussed in subsection 7.2.1, the prosodic contour of the rightmost expression is characterised by a significantly faster tempo and lower pitch with a flat intonation than the main clause. Also as pointed out by Guo, these dislocated constituents, when placed in their non-dislocated positions, would usually receive high-pitched level intonation. It is not clear why a low-pitched expression with a flat intonation should have an emphatic function. Although the reduplication type may create some focus effects with the right-peripheral expression being the focus of attention, the whole structure could also be considered to have some topic effects with the right-peripheral expression being identified as a topicalised focus, since a topic expression is what a sentence is about and hence secures the attention of the addressee.⁵

Finally, Guo's conclusion about the affective function of Chinese right-dislocation appears to be an overgeneralisation. He claims that the right-dislocation structure has a stable association with negative evaluations by the speaker. Of the nine typical examples given in the introduction, only (7.8) expresses negative feelings and none of the rest shows negative emotions. There is no good reason why right-dislocation in Chinese has developed to serve the negative affective function. Guo proposes that this may be related to the special typological features of Chinese: Chinese is one of the languages that tend to grammaticalise social and affective functions. He employs

⁵ Givón mentions Gruber 1967 proposal that the repetition of a pronoun or noun phrase on the right periphery of the clause is an over-topicalisation strategy employed in establishing a topic, especially in child language. This proposal is confirmed by Guo's corpus study which shows that nearly 40% of the data collected from 7-year-old Mandarin Chinese-speaking children are of the reduplication type.

as evidence the Chinese sentence-final particles that can express notions such as surprise, suggestion, concern, etc. But the evidence is quite far from supportive since the right-dislocation form is a syntactic construction involving no morphological markers.

Given the discussion so far, it is clear that Guo's pragmatic analysis of the right-dislocation structure as developing an emphatic function associated with negative evaluations does not tell the whole story, since it can only apply to some cases and some contexts.

7.3 Initial analysis

The observations and discussions thus far lead us to the proposal that the right-dislocation construction at issue is actually a special kind of topic construction, precisely a background-topic construction, which is the analogue of the Hanging Topic construction addressed in Chapter 3. Its peculiarity lies in the fact that, in sharp contrast to its counterpart in the left-dislocation structure which occurs on the left-periphery of a clause, the topicalised expression appears on the right periphery of a clause at a late stage. Compare the right-dislocation sentences with their counterparts, the left-dislocation sentences in (7.37)-(7.39).

(7.37) a. *kexiao jile, zheige ren.*

funny very this person

'Awfully funny, this guy!'

b. *zheige ren, kexiao jile.*

this person funny very

'This guy, (he is) awfully funny!'

(7.38) a. *ta jianghua hao kuai ya, Lisi.*

3SG talk very fast PAR Lisi

'He talks very fast, Lisi.'

b. *Lisi, ta jianghua hao kuai ya.*

Lisi 3SG talk very fast PAR

'Lisi, he talks very fast.'

(7.39) a. *ta bie fan wo le, ta.*

3SG not annoy 1SG PAR, 3SG

'She should stop annoying me, her.'

b. *ta (ya), ta bie fan wo le.*

3SG PAR 3SG not annoy 1SG PAR

'As for her, she should stop annoying me.'

Given that the topic position is normally the sentence-initial position, a marked position which could best catch the addressee's attention, one question that naturally arises from this proposal is, why should a right-dislocated expression be considered to have topic effects?

Here I follow Givón 1976's suggestion that the right-dislocation structure in question is fundamentally a type of topicalisation, precisely a topic-shift device where the rightmost expression, which is originally of an afterthought nature, is provided by the speaker at a relatively late stage for the purpose of manifesting what is being talked about.⁶ If this hypothesis is on the right track, the right-dislocation structure could have a satisfactory explanation: the occurrence of the rightmost expression makes the implicit topic in the zero anaphor pattern suddenly explicit, and the semi-implicit topic in the elaboration pattern entirely explicit. As for the reduplication type, it may be considered an over-topicalisation strategy in which repetition is employed in establishing a topic, especially in child language (Gruber, 1967; Keenan 1974) as confirmed by Guo 1999's corpus study based on the data collected from Chinese-speaking children.

The treatment of the right-dislocation form as a special type of topicalisation may raise another question, that is, how did this inverse topic structure come into being? According to Givón (1976: 154), a discourse device may be used in an 'infelicitous' way, for being too weak or too powerful on certain occasions. This does not mean that it may not be employed, but only that it may be either insufficient or wasteful. In the zero anaphor type of right-dislocation, for instance, the use of a zero anaphor is possibly a case of using a too weak discourse device, though Chinese is a radical pro-drop language. It is highly common that the referent of the right-peripheral

⁶ Givón (1976) claims that the strategy of afterthought topic underlies the diachronic development of subject and object agreement from topic agreement. Certainly, this is not the concern of the present discussion.

expression is usually not salient in the immediate context, which may provide some supportive evidence for treating the right periphery structure as a topic-shift device. Consider the following examples where (7.40a) and (7.41a) are used in larger discourse circumstances:

(7.40) a. *zheige ren de biao yan zhen bang.*

this person's performance really superb
'This guy's performance is really superb.'

b. *?*kexiao jile, zheige ren.*

funny very this person
'Awfully funny, this guy!'

c. *(ta) kexiao jile.*

3SG funny very
'(He's) awfully funny.'

(7.41) a. *Lisi de jiangyan hen jingcai.*

Lisi's speech very wonderful
'Lisi's speech is very wonderful.'

b. *?*ta jianghua hao kuai ya, Lisi.*

3SG talk very fast PAR Lisi
'He talks very fast, Lisi.'

c. *ta/Lisi jianghua hao kuai ya.*

3SG/Lisi talk very fast PAR
'He/Lisi talks very fast.'

Deletion of the rightmost NPs *zheige ren* 'this person' and *Lisi* would of course make the (b) sentences perfectly acceptable, as shown in the (c) sentences. If right-dislocation originally has an afterthought property, then there is a justification for the provision of a rightmost expression. In other words, the right-dislocation structure may be just the right strategy to insure that the addressee knows what the speaker is talking about. In view of this, we can consider the right-periphery construction as a discourse device with the end-placed expression being the topic of the clause, an afterthought-topic in Givón's terminology. Note that this right-dislocation construction is just the mirror image of the topic constructions addressed in Chapter 3.

Although compared with the left-periphery structure this right-periphery structure is relatively marginal in terms of frequency and popularity, it has lost its afterthought properties and developed from a repair device into a discourse device. As has been discussed in the previous sections, the peripherally positioned expressions display consistent prosodic and syntactic properties. Prosodically, the rightmost noun phrase is characterised by a fast tempo and low-pitch with a flat intonation in sharp contrast to the high-pitched main clause. Syntactically, this expression must be placed outside the clause, namely it must follow the sentence-final particle in sequence. Violation of such a restriction would result in severe ungrammaticality, which strongly suggests that the right-periphery form is external to the main clause and hence a case of late adjunction in contrast to the early adjunction of the left-periphery form in the marked topic position.

Although the sentence-initial position is usually the typical topic position, the sentence-final position is also likely to be the locus for topical expressions. Cross-linguistically, some topic-marking languages allow topic-marked expressions to occur at the right periphery of the clause. Consider the following Korean example where a topic-marked NP is end-placed (Kempson et al 2004):

- (7.42) *tutie* *wa-ss-ta* *Chris-nun*.
 eventually come-PAST, DEC Chris-TOPIC
 ‘Eventually, he came, Chris.’

Although Chinese is not a topic-marking language, the topicality of the end-placed expression can be shown in a larger discourse circumstance. Just like the left-peripheral expression that duly secures the attention of the addressee, an end-placed expression can work in the same fashion, the evidence for which is that the hearer would normally focus his/her attention on the referent of this right-peripheral expression and then take his/her turn to say something about it. For instance, a naturally-occurring context for sentence (7.4), repeated here as (7.43a), would be something like (b), not (c), for the reason that in (a) the speaker has just shifted the topic to *Lisi*, about whom the hearer is duly expected to speak something as in (b),

but in (c) the hearer ignores this new topic and shifts to another new topic, which certainly makes the dialogue lack coherence.

(7.43) a. *ta jianghua hao kuai ya, Lisi.*

3SG talk very fast PAR Lisi

‘He talks very fast, Lisi.’

b. *ta/Lisi zoulu ye hen kuai de.*

3SG/Lisi walk also very fast DE

‘He/Lisi walks very fast, too.’

c. *?*ta/Lisi de fangzi hen da ya.*

3SG/Lisi ‘s house very big PAR

‘His/Lisi’s house is quite big.’

All in all, the right-dislocation construction is not a true afterthought one any more, though it originally is, since it has been conventionalised as a grammatical structure. In a sense, it has changed from a repair device to a discourse device in which the right-dislocation form is an end-place topical expression, precisely a background topic.

7.4 A Dynamic account

In this section, I shall demonstrate how the DS machinery used to characterise the topic construction can apply to this background topic construction as well, and how the time linear parsing approach can capture its background topic effect and the asymmetry between left- and right-periphery effects displayed by the two constructions. Recall that in dealing with the topic structure in Chapter 3, we postulated the building of a LINK relation between a node of type *e*, projected by an initially-placed noun phrase and a node of type *t*, the main propositional structure. Precisely, the topical expression at the outset of an utterance, which can be taken as a minimal context, serves to create the relationship to the larger context. Thus, topic can be considered to provide a point of departure from which the primary structure is linked and relative to which the subsequent interpretive process takes place. The transition from the initial tree with top-node of type *e* to the second tree with top-node of type *t* can be generalised by the following rule, as already shown in Chapter 3.

(7.44) $e \Rightarrow t$ TRANSITION

$$\frac{\{Tn(n), Ty(e), Fo(\alpha), \dots, \diamond\}}{\{\{Tn(n), Ty(e), Fo(\alpha), \dots, \}, \{\langle L^{-1} \rangle Tn(n), ?Ty(t), ?\langle D \rangle Fo(\alpha), \diamond\}\}}$$

The requirement for a logical formula on the following tree as shown in the format $? \langle D \rangle Fo(\alpha)$ imposes an anaphoric relationship between the two separate trees. Hence, we expect the obligatory occurrence of an anaphoric expression, which could be a zero anaphor, given that Chinese is pro-drop language. The background topic construction is naturally interpreted in the DS framework analogously, but inversely, with a transition from the top node of the primary tree with top node of type t to some subsequent tree decorated with a requirement of type e . The term decorating the LINKed structure is required to be identical to some sub-term of the completed propositional structure. Thus, we can formulate the construction rule in (7.45) which licenses the transition in figure 7.1.

(7.45) $t \Rightarrow e$ TRANSITION

$$\frac{\{\dots, \{Tn(0), \dots Ty(t), Fo(\phi), \dots, \{\uparrow * Tn(0), Tn(n), Ty(e), Fo(\alpha)\}, \dots, \diamond\}\}}{\{\dots, \{Tn(0), \dots Ty(t), Fo(\phi), \dots, \{\uparrow * Tn(0), Tn(n), Ty(e), Fo(\alpha)\}, \dots\} \dots \{\langle L^{-1} \rangle Tn(n), ?Ty(e), ?Fo(\alpha), \diamond\}\}}$$

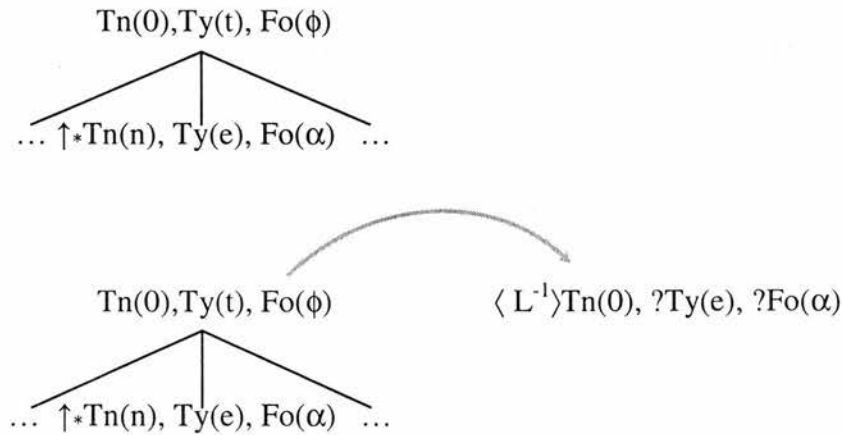


Figure 7.1: Licensing Late LINK Adjunction

The transition rule in (7.45) as a late LINK Adjunction is the mirror image of the early LINK Adjunction rule in (7.44). The fact that the rule licenses the projection from a completed tree with top node of type t can provide a direct explanation for optionality of the rightmost expression. That is, the omission of the end-place expression, as mentioned in subsection 7.2.1, would not affect the grammaticality of the construction. The requirement on the following tree, as displayed in the form $?Ty(e)$, $?Fo(\alpha)$, justifies the LINK transition and can also provide a direct explanation for co-referentiality. That is, the rightmost expression decorating the linked structure must be identical to the value of the anaphoric expression or the referring expression in the preceding primary structure.

Now we can see what sort of interpretation a structure constructed by this rule is bound to have. Given that an anaphoric expression in the canonical position is construed as decorating a fixed node, it will have to be interpreted as referential and will need to instantiate its value from a larger context. Since an anaphoric expression projects a metavariable with its associated formula requirement, the propositional tree cannot be completed until substitution takes place. In other words, it is the assigned value derived from substitution that is carried across as a requirement on the development of the linked structure. This can only be satisfied by the formula value of some referential term decorating the linked tree. Informally speaking, the anaphoric expression in the clausal sequence must be interpreted relative to the context in which it is processed to establish a logical value, and the right-peripheral expression must be interpreted as referring to the same individual so as to ensure that there is a shared term in the two structures, hence the reported backgrounding topic effect.

With the late LINK Adjunction rule and other relevant tools in mind, we now can turn to the issue of how to characterise the background-topic construction. To begin with, let us deal with the zero anaphor type like sentence (7.1), repeated here as (7.46).

(7.46) *jianghua hao kuai ya, Lisi.*

talk very fast PAR Lisi

‘(He) talks very fast, Lisi.’

The initial stage of parsing the subjectless sentence is to introduce the initial tree, as in parsing a canonical sentence. Like a pronoun, the zero anaphor in the subject position projects a place-holding metavariable U , decorating the type e node. Subsequent to parse of the zero anaphor, the processing of the VP licenses the building of a one-place predicate node with a logical formula $Fo(Jianghua_Haokuai)$. Finally, the sentence-final particle ya signals that there are no further constituents in this main propositional structure. Figure 7.2 shows the initial stage where both daughters have been constructed.

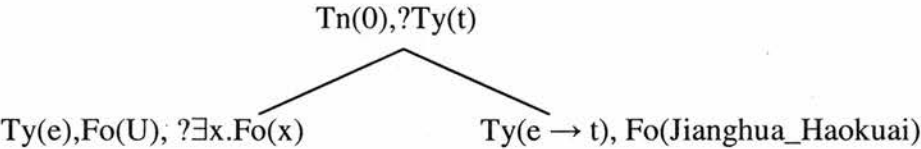


Figure 7.2: Parsing *jianghua hao kuai ya*

A mother node cannot be completed unless both daughters do not carry any outstanding requirements. Since the $\text{Ty}(e)$ node carries a formula requirement, the interpretation process of the above propositional tree cannot be completed until substitution of the metavariable with a formula value has occurred. It is the assigned value derived from substitution that is carried across as a requirement on the construction of the LINKed structure. Thus, in parsing (7.46), the metavariable U projected by the zero anaphor is substituted in context with the term picking out *Lisi* which is carried across the LINK relation as requirement to be satisfied by the formula value of the proper name.

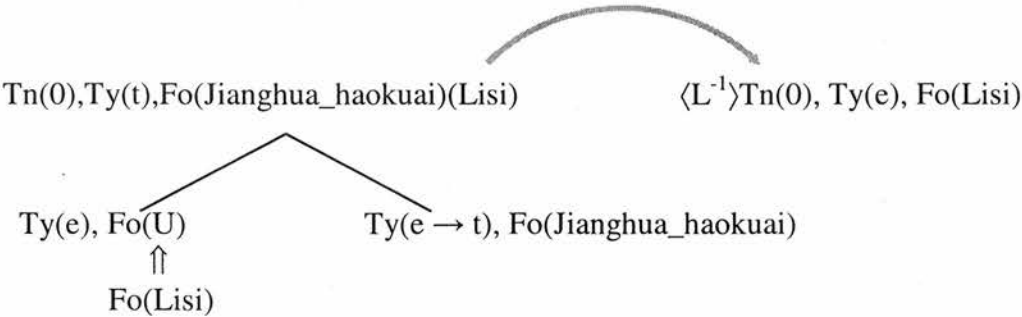


Figure 7.3: Parsing *jianghua hao kuai ya, Lisi*.

Notice that there is nothing that can stop a pronoun from occurring in the clausal string since a pronoun can also project a place-holding metavariable with an associated formula requirement. Naturally, we can find examples like (7.4), repeated here as (7.47), where a pronoun in the main clause is identified as co-referential with the rightmost NP.

(7.47) *ta jianghua hao kuai ya, Lisi.*
 3SG talk very fast PAR Lisi
 ‘He talks very fast, Lisi.’

This is actually an elaboration type of right-dislocation where the final expression provides more information and hence makes the relatively implicit coreferent explicit. Certainly, we can also find examples like (7.5), repeated here as (7.48), where the right-peripheral NP is co-referential to a demonstrative.

(7.48) *zhe tai mei le, zhe hua.*
 this too beautiful PAR this flower
 ‘This is very beautiful, this flower.’

In parsing sentences like the above, the analysis of the demonstrative seems problematic at the first glance. Here I adopt the position that the demonstrative, which is called *zhishi daici* ‘demonstrative pronoun’ in traditional linguistics (e.g. Wang 1959, Lü 1982), projects a place-holding metavariable just like a pronominal. Again, the effect of the metavariable is to force some inferential effort to satisfy the associated requirement to find a formula value. The processing of the clausal sequence is displayed in figure 7.4.

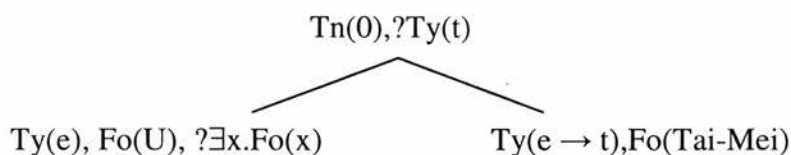


Figure 7.4: Parsing *zhe tai mei le*

At the point the demonstrative pronoun is parsed, there are two possibilities of instantiating its value. One is that the hearer may identify what it refers to, for instance, a brilliant flower conceptualised with an arbitrary name f_{21} . The other is that the hearer may not identify what it refers to, but the right-dislocated expression helps him or her to identify the referent. Specifically, the common noun phrase *hua* ‘flower’ provides further information about the potential referent, namely what is referred to must have the properties of being a flower.

As for the demonstrative in the rightmost NP, it behaves like a definite article in English. Following the analysis of Kempson et al. (2001) who treat common nouns as expressions of type *cn*, the referential expression *zhe hua* ‘this flower’ can be analysed as in figure 7.5.⁷

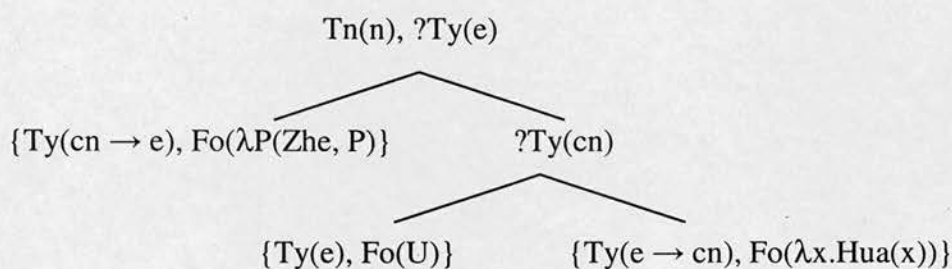


Figure 7.5: Parsing *zhe hua*

After processing the rightmost expression whose content $\text{Fo}(\text{Zhe}, \text{U}, \text{Hua}(\text{U}))$ constrains the interpretation of the demonstrative pronoun in the clausal string, the hearer may easily identify, say, the brilliant flower labeled f_{21} , as the appropriate candidate for substitution of the demonstrative metavariable in the propositional structure. Under such an analysis, the sentence (7.48) will have the final formula value $\text{Fo}(\text{Tai_Mei}(f_{21}) \wedge \text{Hua}(f_{21}))$.

⁷ It should be pointed out that the construal of Chinese common nouns as an expression of type *cn* here is different from that used in preceding chapters in which they are treated as an expression of type *e*. As mentioned in Chapters 3 and 4, the interpretation of common nouns in Chinese is context-dependent: sometimes they behave like an expression of type *e* because bare nouns can be used as an argument and sometimes they just behave like an ordinary noun phrase, and hence can be treated as an expression of type *cn*.

Also notice that there is nothing in the transition rule of (7.45) stopping the reduplication of an anaphoric expression or a nominal expression within the main clause. Hence, we can find the following examples which are apparently of the same type as those sentences (7.7)-(7.9).

(7.49) *wo gai zenme ban na, wo.*

1SG should how do PAR 1SG

‘What shall I do, me?’

(7.50) *ta zhen liaobuqi ya, ta.*

3SG really great PAR 3SG

‘She’s really great, her.’

(7.51) *Lisi xie xin le ma, Lisi?*

Lisi write letter PFV Q, Lisi

‘Did Lisi write a letter, Lisi?’

(7.52) *zhe miyu tai miao le, zhe miyu.*

this puzzle too tricky PAR this puzzle

‘This puzzle is very tricky, this puzzle.’

As discussed in section 7.3, the reduplication type is an instance of over-topicalisation, a strategy in which recapitulation is employed in establishing a topic. Naturally, the repetition of the nominal expressions in this sort of sentence places extra emphasis on their referents, and hence enhances the topicality of these subject NPs which are actually the topic of the relevant sentences, albeit implicitly to some extent. This can explain why the reduplication type is considered to serve an emphatic function (e.g. Guo 1999) or to create focus effects (e.g. Cann et al, in press).⁸ This can also explain why a nominal expression in the object position is rarely doubled at the right periphery, because generally speaking the object NP is not the topic of the sentence.⁹ Hence the unacceptability of the following examples

⁸ The effect of reduplicating a nominal or an anaphoric expression in context, as pointed out by Cann et al (in press), is usually of potential contrastive focus. Consider the following example, a spontaneous remark in a telephone conversation between Ruth Kempson and Ronnie Cann 15th September 2003.

(i) We don’t start teaching next week, us.

⁹ According to Guo 1999’s corpus study, right dislocation involving the subject NP takes up 72% of the total while there are only two cases involving the object NP, which are both of the elaboration type.

where the right-peripheral expressions, which are the same as those used in (7.49)-(7.52), are reduplication of object NPs in the main clauses.

(7.53) **ni jiao wo zenme ban ba, wo.*

2SG teach 1SG how do PAR 1SG

*‘You teach me what to do, me.’

(7.54) **wo renwei ta liaobuqi ya, ta.*

1SG consider 3SG great PAR 3SG

*‘I consider her great, her.’

(7.55) **Zhangsan xihua Lisi ma, Lisi?*

Zhangsan like Lisi Q, Lisi

*‘Does Zhangsan like Lisi, Lisi?’

(7.56) **ta cai-dui le zhe miyu la, zhe miyu.*

3SG guess-right PFV this puzzle PAR this puzzle

*‘He resolved this puzzle, this puzzle.’

Notice that the final expressions in all the well-formed examples are the referring expressions. This follows the fact that the anaphoric expression in the clausal sequence, in particular, is not cataphoric, but required to be identified from a larger context so as to complete the interpretation of the main clause. Also note that the anaphoric expression in the background-topic construction is interpreted in exactly the same fashion as that of the anaphoric expression in the hanging topic construction, namely they must depend on a term constructed outside the main clause, except that the former relies on the left peripheral expression while the latter resorts to the right peripheral expression.

Despite the mirror-image of the topic construction this analysis reflects, the dynamics of left-right processing captures an asymmetry between left and right periphery effects, that is, a linked structure projected by the leftmost NP as a topic cannot depend for its interpretation on any information projected by the following main clause. The anaphoric expression in the clausal structure, however, must rely for its interpretation on the subsequent linked structure projected by the rightmost NP topic.

7.5 Summary

In this chapter I have characterised a typical right-dislocation structure in Chinese, precisely a background-topic construction. The construction has been analysed as involving a LINK transition from a completed tree of type t projected by the clausal sequence to a subsequent tree of type e projected by the rightmost expression. The dynamic analysis, a consequence of which is the background-topic construal, exactly reflects the functional treatment of the right-peripheral expression as displaying topic effects in analogy to those of left-peripheral expression in the topic construction. The successful characterisation demonstrates the ability of DS to account for the common properties of left and right dislocation phenomena with the same tools and terms, and in the meantime its ability to capture the different periphery effects of two constructions mirroring each other.

Chapter 8

Conclusions

In this study I have looked at both the left and the right boundary of the Chinese clause within the framework of Dynamic Syntax. Precisely, in the first part of the study I have focused on the preverbal domain and explored grammatical constructions such as topic, passive and emphatic structures which structurally all have been shown to display left-periphery effects, though semantically the left-dislocated expressions do not have exactly the same properties. In the second part of the study, I have focused on the postverbal domain and explored grammatical constructions such as focus and background topic constructions which structurally both have been shown to display right-periphery effects, though semantically the right-dislocated expressions clearly have different properties. The fruitful exploration is attributable to the novel approach of DS that takes the incremental, left-to-right processing of linguistic forms to be a fundamental part of characterising the relationship between syntactic structure and semantic interpretation.

Looking at linguistic structure in Chinese from a dynamic perspective, I have successfully characterised the left- and the right-periphery effects of its key grammatical constructions. As for the left-dislocation structures, I have provided two forms of analyses employing the DS concepts of unfixed nodes and LINKed structures. As for the right-dislocation structures, I have shown that the same strategies employed in characterising left-periphery effects can also be used in analysing right-periphery effects, thus providing a unitary account of the two boundaries of the Chinese clause. I have thus demonstrated that a dynamic approach can best reflect one of the salient properties of Chinese, i.e., word order constrains its interpretation and defines its grammatical functions, as mentioned in Chapter 1.

In what follows, I shall summarise the major findings of this study and discuss its significance and implications for linguistic research, Chinese linguistics in particular and linguistic theorizing in general.

8.1 Contributions to Chinese linguistics

In Chapter 1, I have briefly discussed that as a non-inflectional language Chinese is largely dependent on word order in defining its grammatical functions. Because of reliance on word order rather than inflectional morphology, we expect a different sort of interaction between syntax, semantics and pragmatics in the interpretation of this language than languages like English. Focusing on the dislocation phenomenon present in the Chinese clause, this study brings out all aspects of information such as syntactic, semantic and pragmatic, behind the object of inquiry, and demonstrates that a full understanding of linguistic structure should be grounded in a dynamic perspective.

Although I have developed a parsing-based analysis of left and right dislocation in Chinese, implicit in it are some findings about the general properties of this language. Looked at from a theory-neutral, descriptive viewpoint, the major findings of this study can be summarised as follows: (i) dislocation is commonly used in such a non-inflectional language, and is apparently motivated for fulfilling various grammatical (and discourse) functions; (ii) the extent to which syntax, semantics and pragmatics interact in the interpretation of dislocation structures is considerable; (iii) Chinese is indeed a topic-prominent language where topic is not only manifest in pure topic structure, as have been generally assumed, but also noticeable in other grammatical structures.

Firstly, as shown by the first part of this study, topic, passive and many of the emphatic constructions all involve dislocating a constituent at the left periphery of the clause and hence all display left-periphery effects, albeit to a varying degree. In topic constructions dealt with in Chapter 3, the left-peripheral constituent, either morphologically marked by a particle or phonologically marked by a pause tone, is overtly presented; in passive constructions dealt with in Chapter 4, the left-peripheral expression, characteristically followed by the voice particle *bei*, is invariably interpreted as the fronted patient argument of the predicate; in many of the emphatic sentences dealt with in Chapter 5, the pre-copular element is also identified as a given term providing a context from which the postcopular assertive clause develops.

As shown by the second part of this study, focus and background topic constructions both involve displacing a constituent at the right boundary of the clause and hence display right-periphery effects, though also to a varying extent. In focus constructions dealt with in Chapter 6, the right-peripheral expression is identified as the focus which is dislocated in the postcopular position, as opposed to the postcopular in-situ focus in Chapter 5; in background topic constructions dealt with in Chapter 7, the right-peripheral expression is characteristically set off from the clausal sequence, and is also overtly presented, mirroring the left-peripheral expression in topic constructions in Chapter 3.

Dislocation defines the grammatical function of the relevant structure. The left dislocation of any constituent in a canonical sentence results in a topic structure which is able to fulfill a certain discourse function, as evidenced by the saliency or availability of the left-peripheral expression in the discourse context; the left dislocation of the patient argument in a canonical sentence results in a passive structure which with the help of the voice particle *bei* is able to highlight the affectedness of the fronted constituent; the left dislocation occurring in the emphatic structure is motivated for the same purpose as the topic structure; The right dislocation of an argument expression of a canonical sentence to the postcopular position yields a focus structure which is able to express a uniqueness or an exhaustiveness function; The right dislocation of an argument expression outside a clausal string yields a background topic structure which is able to exercise the topic-shift function.

Secondly, the study shows that in the dislocation structures, syntactic, semantic and pragmatic information are encoded in very subtle ways, suggesting that a comprehensive analysis of such grammatical structures cannot be sought in only syntactic, semantic or pragmatic terms, but in a dynamic perspective that combines all three. The relation between the topic and the comment in the topic structure, for instance, is encoded not only syntactically, as in the English-style topic structure, but also semantically or pragmatically as in the Chinese-style topic structure; the pre-*bei* expression in the passive structure is not only fronted to the most prominent syntactic position for the purpose of highlighting the semantic aspect of affectedness, but also assigned some special pragmatic salience; in both the emphatic and focus structures,

the semantics of the copula *shi*, which is underspecified in content as well as in type, is enriched through a process of pragmatic inference over predicates provided by local context. The interaction between various sorts of information presupposes that one can only take a dynamic, inference-based approach to such linguistic structures.

Thirdly, this study brings up the issue concerning the general property of Chinese clause structure. From an interpretive perspective it provides some justification for Chao 1968's characterisation of Chinese sentence structure as topic-comment rather than subject-predicate, as mentioned in Chapter 3. Although it is generally agreed among linguists that Chinese is a topic-prominent language, the discussion of topic in the literature is mainly focused around the topic construction (C. Li & Thompson, 1976, 1981; Tsao, 1977; Xu & Langendoen 1985; Y. Huang 1994). The present study demonstrates that topic is not only prominent in the pure topic construction, but also noticeable in the passive, emphatic and background topic constructions.¹

Last but not the least, this study may provide some insights into a typological issue which has interested both functional and formal linguists, that is, whether languages can be distinguished in terms of 'syntactic' type versus 'pragmatic' type. Some functionalists (e.g. Givón 1979) distinguish languages with respect to the mode of communication: languages with the pragmatic mode usually have a topic-comment structure, whereas languages with the syntactic mode usually have a subject-predicate structure. Some formalists (e.g. J. Huang 1984) also distinguish languages in the similar fashion: syntactic type of languages like English are sentence-oriented while pragmatic type of languages like Chinese are discourse-oriented. The prominence of topic in various grammatical structures and the saliency of topic in the discourse context seem to provide some supporting evidence for such a move. There is of course much room for future research on this issue, both empirical and theoretical.

¹ Recently more and more researchers have realised that topic is noticeable in other Chinese grammatical constructions as well. For instance, Hedberg (1999) provides some discussion of the topical properties of the pre-*shi* constituent in the emphatic construction. Y. Huang (2000) also provides some discussion of the topical properties of the pre-*bei* expression in passive constructions.

8.2 Reflections on linguistic theorizing

Of course, the main findings reported in this study are the outcome of the successful characterisation of the left and right dislocation in the Chinese clause, which are in turn attributed to the DS methodology employed throughout this thesis. In Chapter 2, I argued that a truly explanatory account of the compositional and context-dependent properties of natural language cannot rely on the conventional methodology which results in the separation of syntax and semantics, on the assumption that the former, which involves the postulation of static and abstract representations of syntactic structure, can feed the latter, which involves a process of building interpretation with information established in context. I further argued that a proper methodology should take the dynamics of natural language into account and introduce a system of representation that can be used in a dynamic way to capture the interpretive process in which both syntactic and semantic explanations can be articulated.

Through demonstrations of the complexity of the syntax-semantics correspondence, which is often shown in the format that a given sequence has more than one truth-denotational context, this study is a justification for advocating a dynamic approach to linguistic structure, on the grounds that it can provide a comprehensive analysis which makes both the syntactic and semantic explanations of language explicable through the dynamics of language processing. Having adopted a parsing-oriented perspective, as introduced in Chapter 2, DS incorporates into its system of two notions, namely underspecification, which is taken as not only syntactic but also semantic, and contextual enrichment which defines context as not only sentence by sentence but also word by word. The fruitful exploration of Chinese dislocation structures supports the use of these two notions as a theoretical tool in analysing language, because they make the interplay between structure and context more explicit.

The notion of underspecification, syntactic and semantic, is widely employed in the analyses of the grammatical constructions explored in this study. The structural use of underspecification is best shown in the characterisation of both the left-peripheral and right-peripheral expressions. Chapter 3 analyses the left-dislocated constituent either as a term decorating an unfixed node or a term projecting a linked structure; Chapter 4 construes the pre-*bei* expression as projecting an unfixed node yet with a

specific target position; Chapter 5 treats the pre-copular element as a given term introducing a linked structure. The concept of unfixed nodes and linked structures apply equally to the right dislocation structures, with minor variation in the rule formation. In Chapter 6, The postcopular constituent is analysed as projecting an unfixed node updating a contextually given structure; in Chapter 7, the right-dislocated expression is construed as a term linked to a given propositional structure.

The semantic use of underspecification is best shown in the analyses of anaphora throughout Chapters 3-7 and the copula in Chapters 5 and 6. The anaphoric expression, whether in the null form or in the form of a pronoun, is analysed as projecting a metavariable whose content depends on context for instantiation; Similar to the anaphoric expression, the copula is construed as providing a predicate metavariable whose content also relies on context for interpretation. The semantically underspecified content requires to be pragmatically enriched, reflecting the context-dependent property of language. The contextual enrichment of the anaphoric expression is through a process of pragmatic substitution, a direct explanation of its co-referentiality, while the contextual enrichment of the copula is through a process of pragmatic inference, a straightforward account of its underdeterminacy.

Note how DS' incorporation of the notion of underspecification into its machinery allows the collapsing of the dichotomy between what should be explained in syntax and what should be explained in semantics. Once a dynamic perspective is adopted, syntactic information can be viewed in terms of procedures for building semantic information. Given that the process of building semantic information involves the incremental presentation of linguistic material, DS is committed to a procedure of constructing structured representations of content. Structural properties of natural language are therefore explained in terms of how they contribute to the structural representations of content. Seen in this perspective, natural language expressions provide input procedures for the incremental process of constructing an eventual representation of interpretation, so syntactic explanations are couched in the dynamics of transition between the input and output structures.

The successful characterisation of the left and right dislocation in Chinese justifies such a dynamic, procedural approach. As shown throughout Chapters 3-7, the account of the structural properties of the dislocation constructions explored does not involve any independent concept of syntactic and semantic representation but only the progressive construction of logical forms to which each word in a sentence provides partial information. The dislocational properties of the left-peripheral expressions, for instance, have been illustrated through a transition either from a top node to an unfixed node, as in the analysis of those with focal properties, or from an initial node to a top node, as in the analysis of those with topic properties. Syntax is defined in terms of procedural construction of structures representing content as established in context. With the use of the concept of underspecification, linguistic structures are not described in terms of some static configuration, but in terms of transitions across partial structures to a complete structure. It is in this sense that syntax is made dynamic.

The dynamic approach adopted in this study opens up opportunities for future research. The use of the concept of contextual enrichment in the DS system breaks ground in addressing the theoretical question discussed in Chapter 2, i.e., how the semantic interpretation of linguistic expressions is determined in context. Explicitly making pragmatic inference a central part of linguistic formalism, which has led to successful analyses of the copula *shi* in both emphatic and focus constructions, enables DS to provide a natural characterisation of the interplay between syntax, meaning and context. Therefore, the analysis developed in this study is likely to cover more linguistic phenomena in Chinese and is extendable to other languages as well. Continuing research on the syntax-pragmatics interface will certainly have great prospects.

Finally, the work done here justifies the DS stance about linguistic knowledge. With special reference to a fascinating language like Chinese, this study shows that a full understanding of the nature of language and the knowledge of language cannot be achieved without a better understanding of the use of that language. The complex, subtle interaction between various kinds of linguistic knowledge in the interpretation of grammatical structures involving dislocation is a perfect reflection of what natural languages enable human beings to do. Without knowing how to use this linguistic

information, one certainly cannot claim that he or she knows that language. Hence there is justification for encoding the dynamics of natural language in linguistic formalism.

REFERENCES

- Alsina, A., Bresnan, J. and Sells P. 1997. *Complex predicates*. Stanford: CSLI Publications.
- Andrews, A. 1985. The major functions of the noun phrase. In T. Shopen (ed.), *Language typology and syntactic description, vol.1*, 62-154. Cambridge: Cambridge University Press.
- Andrews, A. 1990. Case structures and control in Modern Icelandic. In J. Maling and A. Zaenen (eds.), *Syntax and semantics vol. 24: Modern Icelandic syntax*, 62-154. New York: Academic Press.
- Baker, M. 1988. *Incorporation: A theory of grammatical function changing*. Chicago: University of Chicago Press.
- Blackburn, P. and Meyer-Viol, W. 1994. linguistics, logic and finite trees. *Bulletin of Interest Group for Pure and Applied Logic* 2: 3-29.
- Bresnan, J. (ed.). 1982. *The mental representation of grammatical relations*. Cambridge, MA: MIT Press.
- Büring, D. 1997. *The meaning of topic and focus*. London: Routledge.
- Cann, R. 1993. *Formal semantics: An introduction*. Cambridge: Cambridge University Press.
- Cann, R. 2001. How pronominal are expletive pronouns? In P. Dekker and R. van Rooy. (eds.), *Proceedings of the 13th Amsterdam Colloquium*, 55-60.
- Cann, R. 2004. Towards a dynamic account of 'be' in English. In I. Comorowski and K. von Heusinger (eds.), *Existence: syntax and semantics*. Dordrecht: Kluwer.
- Cann, R. 2004. Semantic underspecification and the interpretation of copular clauses in English. In K. von Heusinger and K. Turner (eds.), *Where semantics meets pragmatics*. Oxford: Elsevier.
- Cann, R., Kempson, R. and Marten, L (in print). *The dynamics of language*. Oxford: Elsevier.
- Cann, R., Kempson, R., Marten, L., Otsuka, M. and Swinburne, D. 2004. On the left and on the right. In D. Adger, G. Tsoulas and C. de Cat (eds.), *Peripheries*. Oxford: Oxford University Press.
- Cann, R. and Wu, Y. 2003. The dynamic syntax of Chinese passive constructions. MS. The University of Edinburgh.

- Chafe, W. 1976. Givenness, contrastiveness, definiteness, subjects, topics and point of view. In C. Li (ed.), *Subject and topic*, 27-55. New York: Academic Press.
- Chao, Y.-R. 1968. *A grammar of Spoken Chinese*. Berkeley: University of California Press.
- Chen, P. 1996. Pragmatic interpretation of structural topics and relativisation in Chinese. *Journal of Pragmatics* 26: 389-406.
- Chen, P. 2004. Hanyu shuangxiangmingciju yu huati – chenshu jiegou (Double NP constructions and topic-comment articulation in Chinese). *Zhongguo Yuwen* (The Chinese Language) 6: 493-507.
- Cheng, L.-S. L. and Sybesma, R. 1999. Bare and not-so-bare nouns and the structure of NP. *Linguistic Inquiry* 30: 509-542.
- Cheng, R. L. . 1983. Focus devices in Mandarin Chinese. In L. Cheng and Y. Li (eds.), *Studies in Chinese syntax and semantics, Universe and Scope: Presupposition and Quantification in Chinese*, 53-102. Taipei: Student Book Co.
- Chierchia, G. 1989. Structured meanings, thematic roles and control. In G. Chierchia, B. H. Partee, and R. Turner (eds.), *Properties, types and meaning II: Semantic issues*, 131-136. Dordrecht: Kluwer.
- Chierchia, G. 1998. Reference to kinds across languages. *Natural Language Semantics* 6: 339-405.
- Chierchia, G. and MacConnell-Ginet, S. 1990. *Meaning and grammar – An introduction to semantics*. Cambridge, MA: MIT Press.
- Chomsky, N. 1971. Deep structure, surface structure and semantic interpretation. In D. Steinberg and D. Jakobovits (eds.), *Semantics*, 183-216. Cambridge: Cambridge University Press.
- Chomsky, N. 1977. On Wh-movement. In P. Culicover, T. Wasow and A. Akmajian. New York: Academic Press.
- Chomsky, N. 1981. *Lectures on Government and Binding*. Dordrecht: Doris.
- Chomsky, N. 1995. *The Minimalist Program*. Cambridge, MA: MIT Press.
- Comrie, B. 1981. *Language universals and linguistic typology*. Oxford: Blackwell.
- Cruse, D. A. 1986. *Lexical semantics*. Cambridge: Cambridge University Press.
- Cruse, D. A. 2000. *Meaning in language – An introduction to semantics and pragmatics*. Oxford: Oxford University Press.
- Crystal, D. 2001. *A dictionary of linguistics and phonetics*. London: Blackwell.

- Culicover, P. W. and Wilkins, W. 1986. Control, PRO, and the projection principle. *Language* 62: 120-53.
- Davidson, A. 1980. Peculiar passives. *Language* 56: 42-66.
- É. Kiss, K. 1998. identificational focus versus information focus. *Language* 74: 245-273.
- É. Kiss, K (ed.) 2002. *The syntax of Hungarian*. Cambridge: Cambridge University Press.
- Ernst, T. 1994. Chinese adjuncts and phrase structure grammar. *Journal of Chinese Linguistics* 22: 41-72.
- Erteschik-Shir, N. and Lappin. S. 1983. Under stress: A functional explanation of English sentence stress. *Journal of Linguistics* 19: 419-53.
- Erteschik-Shir, N. 1997. *The dynamics of focus structure*. Cambridge: Cambridge University Press.
- Fang, M. 1994. Bejingshua ju zhong yuqici de gongneng yanjiu (A functional study of particles in Beijing dialect). *Zhongguo Yuwen* (The Chinese Language) 239: 129-138.
- Fodor, J. A. 1981. *Representations*. Cambridge, MA: MIT Press.
- Fodor, J. A. 1983. *Modularity of mind*. Cambridge, MA: MIT Press.
- Givón, T. 1976. Topic, pronoun and grammatical agreement. In C. Li (ed.), *Subject and topic*, 149-188. New York: Academic Press.
- Givón, T. 1979. *On understanding grammar*. New York: Academic Press.
- Goodall, G. 1992. Spec-head agreement as the motivation for NP-movement. Paper presented at the 23rd Western Conference on Linguistics, Tucson.
- Greenberg, J. H. (ed). 1966. *Universals of language*. Cambridge, Mass.: MIT Press.
- Grice, H. P. 1975. Logic and conversation. In P. Cole and J. L. Morgan (eds.), *Syntax and semantics 3: Speech acts*, 41-58. London: Academic Press.
- Grimshaw, J. 1990. *Argument structure*. Cambridge, MA: MIT Press.
- Gundel, J. K. 1985. 'Shared knowledge' and topicality. *Journal of Pragmatics* 9: 83-107.
- Gundel, J. K. 1988. Universals of topic-comment structure. In M. Hammond, E. Moravcsik and J. Wirth (eds.), *Studies in syntactic typology*, 209-239. Amsterdam: John Benjamins.
- Guo, J. S. 1999. From information to emotion: The affective function of right-dislocation in Mandarin Chinese. *Journal of Pragmatics* 31: 1103-1128.

- Halliday, M. A. K. 1967. *Intonation and grammar in British English*. Mouton.
- Halliday, M. A. K. and Hasan, R. 1976. *Cohesion in English*. London: Longman.
- Hashimoto, A. 1969. The verb 'to be' in modern Chinese. *Foundations of Language Supplementary Series* 9.4: 72-111.
- Hashimoto, M. 1968. Observations on the passive construction. *Chi-Lin* 5: 59-71.
- Hashimoto, M. 1987. Hanyu beidongshi de lishi quyu fazhan (The history-regional development of the passive voice in Chinese). *Zhongguo Yuwen* (The Chinese Language) 1: 36-49.
- Hedberg, N. 1999. The discourse function of English clefts and Mandarin *shi...de* Constructions. Workshop on the Discourse Function of Clefts, Humboldt University, Berlin, Germany, Oct.1-3.
- Hedberg, N. 2000. The referential status of clefts. *Language* 76: 891-920.
- Heine, B. and Kuteva, T. 2002. *World lexicon of grammaticalization*. Cambridge: Cambridge University Press.
- Herring, S. 1994. Afterthoughts, antitopics, and emphasis: The syntactisation of postverbal position in Tamil. In Butt, M. King, T. Ramchand, G. (eds.), *Theoretical Perspectives on Word Order in South Asian Languages*, 119-152. Stanford: CSLI.
- Heycock, C. and Kroch, A. 1999. Pseudocleft connectedness: implications for the LF interface. *Linguistic Inquiry* 30: 365-397.
- Hopper, P. and Thompson, S. 1980. Transitivity in grammar and discourse. *Language* 56: 251-299.
- Hopper, P. and Traugott, E. C. 1993. *Grammaticalization*. Cambridge: Cambridge University Press.
- Hu, J. H., Pan, H. H. and Xu, L. J. 2001. Is there a finite vs nonfinite distinction in Chinese. *Linguistics* 39-6: 1117-1148.
- Huang, C.- T. J. 1982. *Logical relations in Chinese and the theory of grammar*. Doctoral dissertation, MIT.
- Huang, C.- T. J. 1984. On the distribution and reference of empty pronouns. *Linguistic Inquiry* 15: 531-74.
- Huang, C.- T. J. 1987. Remarks on empty categories in Chinese. *Linguistic Inquiry* 18: 321-57.

- Huang, C.- T. J. 1988. Hanyu zhengfan wenju de mozu yufa (A modular grammar of A-not-A questions in Chinese). *Zhongguo Yuwen* (The Chinese Language) 4: 247-264.
- Huang, C.- T. J. 1989. Pro-drop in Chinese: A generalized control theory. In O. Jaeggli and K. J. Safir (eds.), *The null subject parameter*, 185-214. Dordrecht: Doris.
- Huang, C.- T. J. 1993. Reconstruction and the structure of VP: Some theoretical consequences. *Linguistic Inquiry* 24. 103-138.
- Huang, C.- T. J. 1999. Chinese passives in comparative perspective. *Tsing Hua Journal of Chinese Studies*.
- Huang, Y. 1991. A neo-Gricean pragmatic theory of anaphora. *Journal of Linguistics* 27: 301-35.
- Huang, Y. 1992. Against Chomsky's typology of empty categories. *Journal of Pragmatics* 17: 1-29.
- Huang, Y. 1994. *The syntax and pragmatics of anaphora*. Cambridge: Cambridge University Press.
- Huang, Y. 2000. *Anaphora: A cross-linguistic study*. Oxford: Oxford University Press.
- Hukari, T. E. and Levine, R.D. 1995. Adjunction extraction. *Journal of Linguistics* 31: 195-226.
- Jackendoff, R. 1972. *Semantic interpretation in generative grammar*. Cambridge, MA: MIT Press.
- Jackendoff, R. 1990. *Semantic structures*. Cambridge, MA: MIT Press.
- Jackendoff, R. 2002. *Foundations of language*. Oxford: Oxford University Press.
- Jaeggli, O. 1986. Passive. *Linguistic Inquiry* 17: 587-622.
- Jespersen, O. 1933. *Essentials of English Grammar*. London: G. Allen & Unwin.
- Kadmon, N. 2001 *Formal pragmatics: Semantics, pragmatics, presupposition and focus*. Oxford: Blackwell.
- Keenan, L. E. 1976. Towards a universal definition of 'subject'. In C.Li, (ed.), 303-334.
- Kempson, R. 1988. *Logical form: The grammar cognition interface*. Oxford: Blackwell.

- Kempson, R. 1996. Semantics, pragmatics and natural language interpretation. In S. Lappin (ed.), *Handbook of contemporary semantic theory*, 561-598. Oxford: Blackwell.
- Kempson, R. and Gabby, D. 1998. Crossover: A unified view. *Journal of Linguistics* 34: 73-124.
- Kempson, R., Cann, R. and Jieun, K. 2004. Topic and focus at the peripheries: the dynamics of tree growth. MS. King's College London.
- Kempson, R., Meyer-Viol, W. and Gabbay, D. 2001. *Dynamic syntax: The flow of language understanding*. Oxford: Blackwell.
- Kim, S. and Maling, J. 1993. Syntactic case and frequency adverbials in Korean. In *Harvard studies in Korean linguistics V*, 368-378.
- Klaiman, M. H. 1991. *Grammatical voice*. Cambridge: Cambridge University Press.
- Koopman, H. and Sportiche, D. 1982. Variables and the bijection principle. *The Linguistic Review* 2: 139-63.
- Ladd, D. R. 1980. *The structure of intonational meaning: Evidence from English*. Bloomington: Indiana University Press.
- Ladd, D. R. 1996. *Intonational phonology*. Cambridge: Cambridge University Press.
- Lambrecht, K. 1994. *Information structure and sentence form: topic, focus, and the mental representations of discourse referents*. Cambridge: Cambridge University Press.
- Langacker, R. and Munro, P. 1975. Passives and their meaning. *Language* 51: 789-830.
- LaPolla, J. R. 1989. Topicalisation and the question of lexical passives in Chinese. *Proceedings of the 3rd Annual Conference on Chinese Linguistics*, Bloomington: Indiana University Club, 170-188.
- Li, C. (ed.) 1975. *Word order and word order change*. Austin: University of Texas Press.
- Li, C. (ed.) 1976. *Subject and topic*. New York: Academic Press.
- Li, C., and Thompson, S. 1976. Subject and topic: A new typology of language. In C. Li (ed.), *Subject and topic*, 457-89. New York: Academic Press.
- Li, C. and Thompson, S. 1981. *Mandarin Chinese: A functional reference grammar*. Berkeley & Los Angeles: University of California Press.
- Li, L. 1980. Beizi ju (*bei* sentences). *Zhongguo Yuwen* (The Chinese Language) 6: 401-412.

- Li, J. X. 1955. *Xinzhū guōyǔ yǔfǎ* (New studies in Chinese grammar). Beijing: Commercial Press.
- Li, N., Thompson, S. and Zhang, B. J. 1998. Cong huayu jiaodu lunzheng yuqici 'de' (The particle *de* as an evidential marker in Chinese). *Zhongguo Yuwen* (The Chinese Language) 2: 93-102.
- Li, Y. F. (1990). On v-v compounds in Chinese. *Natural Language and Linguistic Theory* 8: 177-207.
- Li, Y.-H. A. 1990. *Order and constituency in Mandarin Chinese*. Dordrecht: Kluwer.
- Liu, D. and Xu, L. J. 1998. Jiaodian yu beijing, huati ji hanyu lianziju (Focus, background, topic and the *lian* construction) *Zhongguo Yuwen* (The Chinese Language) 4: 243-252.
- Lu, J. G. 2000. Juzi chengfen de houzhi yu hualun jiaoti jizhizhong de hualun houxu shouduan (Postposed sentential constituents as post-completion devices in conversational turn-taking). *Zhongguo Yuwen* (The Chinese Language) 277: 303-310.
- Lu, J. M. 1980. Hanyu kouyu jufa li de yiwei xianxiang (Dislocations in spoken Mandarin grammar). *Zhongguo Yuwen* (The Chinese Language) 1: 28-41.
- Lü, S. X., et al. 1980. *Xiandai Hanyu babai ci* (Eight hundred words in contemporary Chinese). Beijing: Commercial Press.
- Lü, S. X. 1982. *Zhongguo wenfa yaolue* (Essentials of Chinese grammar). Beijing: Commercial Press.
- Lyons, J. 1968. *Introduction to theoretical linguistics*. Cambridge: Cambridge University Press.
- McConnell-Ginet, S. 1982. Adverbs and logical form: a linguistically realistic theory. *Language* 58:144-184.
- Maling, J. 1989. Adverbials and structural case. In S. Kuno, Ik-H Lee, J. Whitman, S-Y Bak, Y-S Kang and Y-j Kim (eds.), *Harvard studies in Korean linguistics III*, 297-308. Cambridge, MA.
- Maling, J. 1993. On nominative and accusative: the hierarchical assignment of grammatical case in Finnish. In A. Holmberg and U. Nikanne (eds.), *Case and other functional categories in Finnish Syntax*, 51-76. Dordrecht: Mouton de Gruyter.
- Marten, L. 2002. *At the syntax-pragmatics interface: Verbal underspecification and concept formation in dynamic syntax*. Oxford: Oxford University Press.

- Massam, D. 1999. Thing is constructions: the thing is, is what's the right analysis? *English Language and Linguistics* 3 2: 335-352.
- Matsui, T. 2000. *Bridging and relevance*. Amsterdam: John Benjamins.
- Mullie, J. 1932. *The structural Principles of the Chinese Language*. Peiping Bureau of Engraving and Printing.
- Packard, J. 1986. A left-dislocation analysis of 'afterthought' sentences in Peking Mandarin. *Journal of the Chinese Language Teachers Association* 21: 3-12.
- Packard, J. (ed.) 1998. *New approaches to Chinese word formation: morphology, phonology and the lexicon in modern and ancient Chinese*. Berlin: Mouton de Gruyter.
- Parsons, T. 1990. *Events in the semantics of English – A study in subatomic semantics*. Cambridge, MA: MIT Press.
- Peyraube, A. 1989. History of the passive construction in Chinese until the 10th century. *Journal of Chinese Linguistics* 17: 335-372.
- Po-Ching, Y and Rimmington, D. 1997. *Chinese: An essential grammar*. London: Routledge.
- Pollard, C. and Sag, I. 1994. *Head-driven Phrase Structure Grammar*. Chicago: University of Chicago Press.
- Postal, P. 1971. *Crossover phenomena*. New York: Holt, Rinehart & Winston.
- Prince, E. 1978. A comparison of wh-clefts and it-clefts in discourse. *Language* 54: 883-906.
- Prince, E. 1980. Towards a taxonomy of given-new information. In P. Cole (ed.), *Radical pragmatics*, 223-55. New York: Academic Press.
- Radford, A. 1981. *Transformational syntax*. Cambridge: Cambridge University Press.
- Ramat, G. A. and Hopper, P. (eds.) 1998. *The limits of grammaticalisation*. Amsterdam: John Benjamins.
- Rizzi, L. 1986. Null objects in Italian and the theory of pro. *Linguistic Inquiry* 17: 501-57.
- Rizzi, L. 1997. The fine structure of the left periphery. In L. Haegeman (ed.), *Elements of Grammar*, 281-337. Dordrecht: Kluwer.
- Roberts, C. 1998. Focus, the flow of information, and universal grammar. In P. W. Culicover and L. McNally (eds.), *Syntax and semantics, vol. 29: The limits of syntax*. New York: Academic Press.

- Rochemont, M. and Culicover, P. 1990. *English focus constructions and the theory of grammar*. Cambridge: Cambridge University Press.
- Rooth, M. 1996. Focus. In S. Lappin (ed.), *Handbook of contemporary semantic theory*, 271-297. Oxford: Blackwell.
- Sag, I. and Pollard, C. 1991. An integrated theory of complement control. *Language* 67: 63-113.
- Schegloff, E. A., Jefferson, G. and Sacks, H. 1977. The preference for selfcorrection in the organisation of repair in conversation. *Language* 53: 361-382.
- Shi, D. X. 1989. Topic chain as a syntactic category in Chinese. *Journal of Chinese Linguistics* 17: 223-62.
- Shi, D. X. 1994. The nature of Chinese emphatic sentences. *Journal of East Asian Linguistics* 3: 81-100.
- Shi, D. X. 1997. Issues on Chinese Passive. *Journal of Chinese Linguistics* 25: 41-70.
- Shi, D. X. 2000. Topic and topic-comment constructions in Mandarin Chinese. *Language* 76: 383-408.
- Shibatani, M. 1985. Passives and related constructions: a prototype. *Language* 61: 821-848.
- Shibatani, M. (ed.) 1988. *Passive and voice*. Amsterdam: John Benjamins.
- Simpson, A. 2002. On the status of modifying DE and the structure of the Chinese DP. In S-W, Tang and C-S Liu (eds.), *On the formal way to Chinese languages*, CSLI, Stanford.
- Simpson, A. and Z.Wu 1999. On the syntax and interpretation of sentence-final DE. In H. Lee, E. Mui and G. Scott (eds.), *SOAS Working Papers in Linguistics*, University of London.
- Simpson, A. and Z. Wu. 2002. Agreement, shells and focus. *Language* 78: 287- 313.
- Sperber, D. and Wilson, D. 1995. *Relevance: Communication and cognition*. 2nd edition. Oxford: Blackwell.
- Sun, C.F. and Givón, T. 1985. On the so-called SOV word order in Mandarin Chinese: a quantified text study and its implications. *Language* 61: 329-351.
- Szabolsci, A. 1986. Indefinites in complex predicates. *Theoretical Linguistic Research* 2: 47-83.
- Tan, F. 1987. The predicate structure of *bei*. *Berkeley Linguistic Society* 13: 285-295.
- Teng, S. H. 1979. Remarks on cleft sentences in Chinese. *Journal of Chinese Linguistics* 7: 101-112.

- Ting, J. 1998. Deriving the *bei*-construction in Mandarin Chinese. *Journal of East Asian Linguistics* 7: 319-354.
- Traugott, E. C. and Heime, B. (eds.) 1991. *Approaches to grammaticalization II: Focus on types of grammatical markers*. Amsterdam: John Benjamins.
- Tsao, F. 1977. *A functional study of topic in Chinese: The first step toward discourse analysis*. Doctoral dissertation, University of Southern California.
- Tsao, F. 1979. *A functional study of topic in Chinese: The first step towards discourse analysis*. Taipei: Student Book Co. Ltd.
- Vallduví, E. 1992. *The information component*. New York: Garland.
- Van Geenhoven, R. 1998. *Semantic incorporation and indefinite descriptions: Semantic and syntactic noun incorporation in West Greenlandic*. Stanford: CSLI Publications.
- Wang, H. 1983. Yingyu he Hanyu de beidongju (Passive voice in English and Chinese). *Zhongguo Yuwen* (The Chinese Language) 6: 409-418.
- Wang, L. 1959. *Zhongguo xiandai yufa* (The grammar of Modern Chinese). Beijing: Commercial Press.
- Wang, L. 1989. *Hanyu yufa shi* (History of Chinese grammar). Beijing: Commercial Press.
- Webelhuth, G., Koenig J.P. and Kathol, A. (eds.) 1999. *Lexical and constructional aspects of linguistic explanation*. Stanford: CSLI Publications.
- Wechsler, S. and Lee, Y-S. 1996. The domain of direct case assignment. *Natural Language and Linguistic Theory* 14: 629-664.
- Wedgwood, D. 2003. *Predication and information structure: A dynamic account of Hungarian pre-verbal syntax*. Doctoral dissertation, University of Edinburgh.
- Williams, E. 1980. Predication. *Linguistic Inquiry* 11: 203-238.
- Williams, E. 1981. Argument structure and morphology. *The Linguistic Review* 1: 81-114.
- Xu, L. J. 1985. Toward a lexical-thematic theory of control. *The Linguistic Review* 5: 345-76.
- Xu, L. J. 1986. Free Empty Category. *Linguistic Inquiry* 17: 75-93.
- Xu, L. J. 2004. Manifestation of informational focus. *Lingua* 114: 277-299.
- Xu, L. J. and Langendoen, D. T. 1985. Topic structures in Chinese. *Language* 61: 1-27.

- Xu, L. J. and Liu, D. Q. 1998. *Huati de jiegou yu gongneng* (The form and function of topic). Shanghai: Shanghai Education Press.
- Yuan, S. L. 1996. Huatihua ji xiangguan de yufa guocheng (Topicalisation and relevant grammatical process). *Zhongguo Yuwen* (The Chinese Language) 253: 241-254.
- Yuan, S. L. 2003. Cong jiaodian lilun kan juwei "de" de jufa yuyi gongneng (On the syntactic and semantic function of *de* in the sentence-final position: from a viewpoint of the modern focus theory). *Zhongguo Yuwen* (The Chinese Language) 1: 3-16.
- Zhang, B. and Hu, Y. S. 1989. *Hanyu yufa yanjiu* (Studies in Chinese grammar). Beijing: Commercial Press.
- Zhang, J. 1987. *Hanyu yufa wenti* (Issues in Chinese grammar). Beijing: Social Science Press of China.
- Zhu, D. X. 1980. *Xiandai hanyu yufa yanjiu* (A study on the modern Chinese grammar). Beijing: Commercial Press.
- Zubizarreta, M. L. 1987. *Levels of representation in the lexicon and in the syntax*. Dordrecht: Foris.
- Zubizarreta, M. L. 1998. *Prosody, focus and word order*. Cambridge, MA: MIT Press.